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<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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Lys Glu Met Val Leu Ser Glu Lys Val Ser Gln Leu Met Glu Trp Thr
 35 40 45

Asn Lys Arg Pro Val Ile Arg Met Asn Gly Asp Lys Phe Arg Arg Leu
 50 55 60

Val Lys Ala Pro Pro Arg Asn Tyr Ser Val Ile Val Met Phe Thr Ala
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Leu Gln Leu His Arg Gln Cys Val Val Cys Lys Gln Ala Asp Glu Glu
 85 90 95

Phe Gln Ile Leu Ala Asn Ser Trp Arg Tyr Ser Ser Ala Phe Thr Asn
 100 105 110

Arg Ile Phe Phe Ala Met Val Asp Phe Asp Glu Gly Ser Asp Val Phe
 115 120 125

Gln Met Leu Asn Met Asn Ser Ala Pro Thr Phe Ile Asn Phe Pro Ala
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Lys Gly Lys Pro Lys Arg Gly Asp Thr Tyr Glu Leu Gln Val Arg Gly
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Phe Ser Ala Glu Gln Ile Ala Arg Trp Ile Ala Asp Arg Thr Asp Val
 165 170 175

Asn Ile Arg Val Ile Arg Pro Pro Asn Tyr Ala Gly Pro Leu Met Leu
 180 185 190

Gly Leu Leu Leu Ala Val Ile Gly Gly Leu Val Tyr Leu Arg Arg Ser
 195 200 205

Asn Met Glu Phe Leu Phe Asn Lys Thr Gly Trp Ala Phe Ala Ala Leu
 210 215 220

Cys Phe Val Leu Ala Met Thr Ser Gly Gln Met Trp Asn His Ile Arg
 225 230 235 240

Gly Pro Pro Tyr Ala His Lys Asn Pro His Thr Gly His Val Asn Tyr
 245 250 255

Ile His Gly Ser Ser Gln Ala Gln Phe Val Ala Glu Thr His Ile Val
 260 265 270

Leu Leu Phe Asn Gly Gly Val Thr Leu Gly Met Val Leu Leu Cys Glu
 275 280 285

Ala Ala Thr Ser Asp Met Asp Ile Gly Lys Arg Lys Ile Met Cys Val
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Ala Gly Ile Gly Leu Val Val Leu Phe Phe Ser Trp Met Leu Ser Ile
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Phe Arg Ser Lys Tyr His Gly Tyr Pro Tyr Ser Phe Leu Met Ser
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<212> DNA

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<211> 158

<212> PRT

<213> Homo sapiens

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Glu Leu Glu Ile Ser Gly Lys Val Arg Ser Leu Ser Ala Ser Leu Trp
 35 40 45

Ser Leu Thr His Leu Thr Ala Leu His Leu Ser Asp Asn Ser Leu Ser
 50 55 60

Arg Ile Pro Ser Asp Ile Ala Lys Leu His Asn Leu Val Tyr Leu Asp
 65 70 75 80

Leu Ser Ser Asn Lys Ile Arg Ser Leu Pro Ala Glu Leu Gly Asn Met
 85 90 95

Val Ser Leu Arg Glu Leu His Leu Asn Asn Asn Leu Leu Arg Val Leu
 100 105 110

Pro Phe Glu Leu Gly Lys Leu Phe Gln Leu Gln Thr Leu Gly Leu Lys
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Gly Met Thr Ser Ile Phe Val Leu Leu Met Val Cys Val Tyr Val Phe
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Glu Ser Lys Glu Ala Lys Lys Leu Ser Ala Arg Gly Phe Phe
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<210> 7

<211> 1462

<212> DNA

<213> Homo sapiens

<400> 7

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<210> 8
 <211> 248
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Gln Ala Glu Leu Ser Arg Thr Gly Arg Ser Arg Glu Val Leu Glu Leu
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 Gly Gln Val Leu Asp Thr Gly Lys Arg Lys Arg His Val Pro Tyr Ser
 65 70 75 80
 Val Ser Glu Thr Arg Leu Glu Glu Ala Leu Glu Asn Leu Cys Glu Arg
 85 90 95
 Ile Leu Asp Tyr Ser Val His Ala Glu Arg Lys Gly Ser Leu Arg Tyr
 100 105 110
 Ala Lys Gly Gln Ser Gln Thr Met Ala Thr Leu Lys Gly Leu Val Gln
 115 120 125
 Lys Gly Val Lys Val Asp Leu Gly Ile Pro Leu Glu Leu Trp Asp Glu
 130 135 140
 Pro Ser Val Glu Val Thr Tyr Leu Lys Lys Gln Cys Glu Thr Met Leu
 145 150 155 160
 Glu Glu Phe Glu Asp Ile Val Gly Asp Trp Tyr Phe His His Gln Glu
 165 170 175
 Gln Pro Leu Gln Asn Phe Leu Cys Glu Gly His Val Leu Pro Ala Ala
 180 185 190
 Glu Thr Ala Cys Leu Gln Glu Thr Trp Thr Gly Lys Glu Ile Thr Asp
 195 200 205
 Gly Glu Glu Lys Thr Glu Gly Glu Glu Glu Gln Glu Glu Glu Glu
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<210> 9

<211> 2104

<212> DNA

<213> Homo sapiens

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<210> 10

<211> 373

<212> PRT

<213> Homo sapiens

<400> 10

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      20             25             30

Gly Gln Lys Lys Ile Arg Glu Ile Gln Glu Arg Glu Ala Ala Glu Tyr
      35             40             45

Ile Ala Gln Ala Arg Arg Gln Tyr His Phe Glu Ser Asn Gln Arg Thr
      50             55             60

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Cys Asn Met Thr Val Leu Ser Met Leu Pro Thr Leu Arg Glu Ala Leu
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 Met Gln Gln Leu Asn Ser Glu Ser Leu Thr Ala Leu Leu Lys Asn Arg
 85 90 95
 Pro Ser Asn Lys Leu Glu Ile Trp Glu Asp Leu Lys Ile Ile Ser Phe
 100 105 110
 Thr Arg Ser Thr Val Ala Val Tyr Ser Thr Cys Met Leu Val Val Leu
 115 120 125
 Leu Arg Val Gln Leu Asn Ile Ile Gly Gly Tyr Ile Tyr Leu Asp Asn
 130 135 140
 Ala Ala Val Gly Lys Asn Gly Thr Thr Ile Leu Ala Pro Pro Asp Val
 145 150 155 160
 Gln Gln Gln Tyr Leu Ser Ser Ile Gln His Leu Leu Gly Asp Gly Leu
 165 170 175
 Thr Glu Leu Ile Thr Val Ile Lys Gln Ala Val Gln Lys Val Leu Gly
 180 185 190
 Ser Val Ser Leu Lys His Ser Leu Ser Leu Leu Asp Leu Glu Gln Lys
 195 200 205
 Leu Lys Glu Ile Arg Asn Leu Val Glu Gln His Lys Ser Ser Ser Trp
 210 215 220
 Ile Asn Lys Asp Gly Ser Lys Pro Leu Leu Cys His Tyr Met Met Pro
 225 230 235 240
 Asp Glu Glu Thr Pro Leu Ala Val Gln Ala Cys Gly Leu Ser Pro Arg
 245 250 255
 Asp Ile Thr Thr Ile Lys Leu Leu Asn Glu Thr Arg Asp Met Leu Glu
 260 265 270
 Ser Pro Asp Phe Ser Thr Val Leu Asn Thr Cys Leu Asn Arg Gly Phe
 275 280 285
 Ser Arg Leu Leu Asp Asn Met Ala Glu Phe Phe Arg Pro Thr Glu Gln
 290 295 300
 Asp Leu Gln His Gly Asn Ser Met Asn Ser Leu Ser Ser Val Ser Leu
 305 310 315 320
 Pro Leu Ala Lys Ile Ile Pro Ile Val Asn Gly Gln Ile His Ser Val
 325 330 335
 Cys Ser Glu Thr Pro Ser His Phe Val Gln Asp Leu Leu Thr Met Glu
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<210> 11
 <211> 3262
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 <213> Homo sapiens

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 <211> 837
 <212> PRT
 <213> Homo sapiens

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 Arg Glu Phe Asn Arg Asn Gln Arg Lys Asp Ser Glu Gly Tyr Ser Glu
 50 55 60
 Ser Pro Asp Leu Glu Phe Glu Tyr Ala Asp Thr Asp Lys Trp Ala Ala
 65 70 75 80
 Glu Leu Ser Glu Leu Tyr Ser Tyr Thr Glu Gly Pro Glu Phe Leu Met
 85 90 95
 Asn Arg Lys Cys Phe Glu Glu Asp Phe Arg Ile His Val Thr Asp Lys
 100 105 110
 Lys Trp Thr Glu Leu Asp Thr Asn Gln His Arg Thr His Ala Met Arg
 115 120 125
 Leu Leu Asp Gly Leu Glu Val Thr Ala Arg Glu Lys Arg Leu Lys Val
 130 135 140
 Ala Arg Ala Ile Leu Tyr Val Ala Gln Gly Thr Phe Gly Glu Cys Ser
 145 150 155 160
 Ser Glu Ala Glu Val Gln Ser Trp Met Arg Tyr Asn Ile Phe Leu Leu
 165 170 175
 Leu Glu Val Gly Thr Phe Asn Ala Leu Val Glu Leu Leu Asn Met Glu
 180 185 190
 Ile Asp Asn Ser Ala Ala Cys Ser Ser Ala Val Arg Lys Pro Ala Ile
 195 200 205
 Ser Leu Ala Asp Ser Thr Asp Leu Arg Val Leu Leu Asn Ile Met Tyr
 210 215 220
 Leu Ile Val Glu Thr Val His Gln Glu Cys Glu Gly Asp Lys Ala Glu
 225 230 235 240
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 260 265 270

Phe Cys Ser Gly His Ala Pro His Phe Pro Met Lys Lys Val Leu Leu
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 Arg Glu His Lys Ala Leu Ile Lys Gln Asp Asn Leu Asp Ala Phe Asn
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 485 490 495
 Gly Glu Glu Glu Val Glu Gln Val Pro Ala Glu Thr Leu Tyr Gln Gly
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 530 535 540
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 545 550 555 560
 Met Lys Leu Gly Val Asp Val Asn Arg His Lys Glu Val Ile Val Lys
 565 570 575
 Ala Ile Ser Ala Val Leu Leu Leu Leu Lys His Phe Lys Leu Asn
 580 585 590

His Val Tyr Gln Phe Glu Tyr Met Ala Gln His Leu Val Phe Ala Asn
 595 600 605
 Cys Ile Pro Leu Ile Leu Lys Phe Phe Asn Gln Asn Ile Met Ser Tyr
 610 615 620
 Ile Thr Ala Lys Asn Ser Ile Ser Val Leu Asp Tyr Pro His Cys Val
 625 630 635 640
 Val His Glu Leu Pro Glu Leu Thr Ala Glu Ser Leu Glu Ala Gly Asp
 645 650 655
 Ser Asn Gln Phe Cys Trp Arg Asn Leu Phe Ser Cys Ile Asn Leu Leu
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 690 695 700
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 725 730 735
 Ser Ala Ile Tyr Gln Lys Val Arg His Arg Leu Asn Asp Asp Trp Ala
 740 745 750
 Tyr Gly Asn Asp Leu Asp Ala Arg Pro Trp Asp Phe Gln Ala Glu Glu
 755 760 765
 Cys Ala Leu Arg Ala Asn Ile Glu Arg Phe Asn Ala Arg Arg Tyr Asp
 770 775 780
 Arg Ala His Ser Asn Pro Asp Phe Leu Pro Val Asp Asn Cys Leu Gln
 785 790 795 800
 Ser Val Leu Gly Gln Arg Val Asp Leu Pro Glu Asp Phe Gln Met Asn
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<211> 1264

<212> DNA

<213> Homo sapiens

<400> 13

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1264

<210> 14

<211> 80

<212> PRT

<213> Homo sapiens

<400> 14

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Met Ala Arg Thr Leu Glu Pro Leu Ala Lys Lys Ile Phe Lys Gly Val
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```

```

Leu Val Ala Glu Leu Val Gly Val Phe Gly Ala Tyr Phe Leu Phe Ser
      20             25             30

```

```

Lys Met His Thr Ser Gln Asp Phe Arg Gln Thr Met Ser Lys Lys Tyr
      35             40             45

```

```

Pro Phe Ile Leu Glu Val Tyr Lys Ser Thr Glu Lys Ser Gly Met
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Tyr Gly Ile Arg Glu Leu Asp Gln Lys Thr Trp Leu Asn Ser Lys Asn
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<210> 15

<211> 2671

<212> DNA

<213> Homo sapiens

<400> 15

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<210> 16

<211> 804

<212> PRT

<213> Homo sapiens

<400> 16

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Met Ala Ala His Arg Pro Gly Pro Leu Lys Gln Gln Asn Lys Ala His
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```

```

Lys Gly Gly Arg His Arg Gly Arg Gly Ser Ala Gln Arg Asp Gly Lys
      20             25             30

```

```

Gly Arg Leu Ala Leu Lys Thr Leu Ser Lys Lys Val Arg Lys Glu Leu
      35             40             45

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```

Ser Arg Val Asp Gln Arg His Arg Ala Ser Gln Leu Arg Lys Gln Lys
      50             55             60

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```

Lys Glu Ala Val Leu Ala Glu Lys Arg Gln Leu Gly Gly Lys Asp Gly
      65             70             75             80

```

```

Pro Pro His Gln Val Leu Val Val Pro Leu His Ser Arg Ile Ser Leu
      85             90             95

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```

Pro Glu Ala Met Gln Leu Leu Gln Asp Arg Asp Thr Gly Thr Val His
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Leu Asn Glu Leu Gly Asn Thr Gln Asn Phe Met Leu Leu Cys Pro Arg

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115	120	125
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Val Val Leu Asp Met Ala Lys Val Ala Asp Thr Ile Leu Phe Leu Leu		
145	150	155
		160
Asp Pro Leu Glu Gly Trp Asp Ser Thr Arg Asp Tyr Cys Leu Ser Cys		
	165	170
		175
Leu Phe Ala Gln Gly Leu Pro Thr Tyr Thr Leu Ala Val Gln Gly Ile		
	180	185
		190
Ser Gly Leu Pro Leu Lys Lys Gln Ile Asp Thr Arg Lys Lys Leu Ser		
	195	200
		205
Lys Ala Val Glu Lys Arg Phe Pro His Asp Lys Leu Leu Leu Asp		
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		220
Thr Gln Gln Glu Ala Gly Met Leu Leu Arg Gln Leu Ala Asn Gln Lys		
	225	230
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		240
Gln Gln His Leu Ala Phe Arg Asp Arg Arg Ala Tyr Leu Phe Ala His		
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		255
Ala Val Asp Phe Val Pro Ser Glu Glu Asn Asn Leu Val Gly Thr Leu		
	260	265
		270
Lys Ile Ser Gly Tyr Val Arg Gly Gln Thr Leu Asn Val Asn Arg Leu		
	275	280
		285
Leu His Ile Val Gly Tyr Gly Asp Leu Pro Asp Glu Gln Ile Asp Ala		
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Pro Gly Asp Pro Phe Pro Leu Asn Pro Arg Gly Ile Lys Pro Gln Lys		
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Asp Pro Asp Met Ala Met Glu Ile Cys Ala Thr Asp Ala Val Asp Asp		
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Met Glu Glu Gly Leu Lys Val Leu Met Lys Ala Asp Pro Gly Arg Gln		
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Glu Ser Leu Gln Ala Glu Val Ile Pro Asp Pro Met Glu Gly Glu Gln		
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Thr Trp Pro Thr Glu Glu Glu Leu Ser Glu Ala Lys Asp Phe Leu Lys		
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Glu Ser Ser Lys Val Val Lys Lys Val Pro Lys Gly Thr Ser Ser Tyr		
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Gln Ala Glu Trp Ile Leu Asp Gly Gly Ser Gln Ser Gly Gly Glu Gly		
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Asp Glu Tyr Glu Tyr Asp Asp Met Glu His Glu Asp Phe Met Glu Glu		
	420	425
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Glu Ser Gln Asp Glu Ser Ser Glu Glu Glu Glu Tyr Glu Thr Met		

435	440	445
Thr Ile Gly Glu Ser Val His Asp Asp Leu Tyr Asp Lys Lys Val Asp 450	455	460
Glu Glu Ala Glu Ala Lys Met Leu Glu Lys Tyr Lys Gln Glu Arg Leu 465	470	475 480
Glu Glu Met Phe Pro Asp Glu Val Asp Thr Pro Arg Asp Val Ala Ala 485	490	495
Arg Ile Arg Phe Gln Lys Tyr Arg Gly Leu Lys Ser Phe Arg Thr Ser 500	505	510
Pro Trp Asp Pro Lys Glu Asn Leu Pro Gln Asp Tyr Ala Arg Ile Phe 515	520	525
Gln Phe Gln Asn Phe Thr Asn Thr Arg Lys Ser Ile Phe Lys Glu Val 530	535	540
Glu Glu Lys Glu Val Glu Gly Ala Glu Val Gly Trp Tyr Val Thr Leu 545	550	555 560
His Val Ser Glu Val Pro Val Ser Val Val Glu Cys Phe Arg Gln Gly 565	570	575
Thr Pro Leu Ile Ala Phe Ser Leu Leu Pro His Glu Gln Lys Met Ser 580	585	590
Val Leu Asn Met Val Val Arg Arg Asp Pro Gly Asn Thr Glu Pro Val 595	600	605
Lys Ala Lys Glu Glu Leu Ile Phe His Cys Gly Phe Arg Arg Phe Arg 610	615	620
Ala Ser Pro Leu Phe Ser Gln His Thr Ala Ala Asp Lys His Lys Leu 625	630	635 640
Gln Arg Phe Leu Thr Ala Asp Met Ala Leu Val Ala Thr Val Tyr Ala 645	650	655
Pro Ile Thr Phe Pro Pro Ala Ser Val Leu Leu Phe Lys Gln Lys Ser 660	665	670
Asn Gly Met His Ser Leu Ile Ala Thr Gly His Leu Met Ser Val Asp 675	680	685
Pro Asp Arg Met Val Ile Lys Arg Val Val Leu Ser Gly His Pro Phe 690	695	700
Lys Ile Phe Thr Lys Met Ala Val Val Arg Tyr Met Phe Phe Asn Arg 705	710	715 720
Glu Asp Val Leu Trp Phe Lys Pro Val Glu Leu Arg Thr Lys Trp Gly 725	730	735
Arg Arg Gly His Ile Lys Glu Pro Leu Gly Thr His Gly His Met Lys 740	745	750
Cys Ser Phe Asp Gly Lys Leu Lys Ser Gln Asp Thr Val Leu Met Asn		

755

760

765

Leu Tyr Lys Arg Val Phe Pro Lys Trp Thr Tyr Asp Pro Tyr Val Pro
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Glu Pro Val Pro Trp Leu Lys Ser Glu Ile Ser Ser Thr Val Pro Gln
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Gly Gly Met Glu

<210> 17

<211> 2321

<212> DNA

<213> Homo sapiens

<400> 17

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Gly Gln Gly Leu Lys His Leu Phe Gln His Gln Arg Arg Arg Ser Ser
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Val Ser Pro His Asp Val Gln Gln Ile Gln Ala Asp Pro Glu Pro Glu
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Met Asp Leu Glu Ser Gln Asn Ala Cys Ala Glu Ile Asp Gly Val Pro
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Thr His Pro Thr Ala Leu Asn Arg Val Leu Gln Gln Ile Arg Val Pro
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Pro Xaa Met Lys Arg Gly Thr Ser Leu His Ser Arg Arg Gly Lys Pro
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Glu Ala Pro Lys Gly Ser Pro Gln Ile Asn Arg Lys Ser Gly Gln Glu
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Met Thr Ala Val Met Gln Ser Gly Arg Pro Met Ser Ser Ser Thr Thr
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Asp Ala Pro Thr Gly Ser Ala Met Met Glu Ile Ala Cys Ala Ala Ala
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Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser Asp His Thr Asn
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Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr Ser Val Ala Ser Asp
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Ser Ser Asn Thr Thr Val Thr Thr Met Lys Pro Thr Ala Ala Ser Asn
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Thr Thr Thr Pro Gly Met Val Ser Thr Asn Met Thr Ser Thr Thr Leu
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Lys Ser Thr Pro Lys Thr Thr Ser Val Ser Gln Asn Thr Ser Gln Ile

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<212> DNA

<213> Homo sapiens

<400> 23

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<213> Homo sapiens

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Ser Val Pro Leu Tyr Leu Ile Tyr Pro Ser Val Glu Asn Val Arg Thr
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Ser Leu Glu Gly Tyr Pro Ala Gly Gly Ser Leu Pro Tyr Ser Ile Gln
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Thr Ala Glu Lys Gln Asn Trp Leu His Ser Tyr Phe His Lys Trp Ser
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Ala Glu Thr Ser Gly Arg Ser Asn Ala Met Pro His Ile Lys Thr Tyr
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Met Arg Pro Ser Pro Asp Phe Ser Lys Ile Ala Trp Phe Leu Val Thr
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Ser Ala Asn Leu Ser Lys Ala Ala Trp Gly Ala Leu Glu Lys Asn Gly
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Thr Gln Leu Met Ile Arg Ser Tyr Glu Leu Gly Val Leu Phe Leu Pro
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Ser Ala Phe Gly Leu Asp Ser Phe Lys Val Lys Gln Lys Phe Phe Ala
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Gly Ser Gln Glu Pro Met Ala Thr Phe Pro Val Pro Tyr Asp Leu Pro
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Pro Glu Leu Tyr Gly Ser Lys Asp Arg Pro Trp Ile Trp Asn Ile Pro
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<212> DNA

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<212> PRT

<213> Homo sapiens

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Gly Leu Asp Ile Lys Phe Lys Asp Asp Val Met Pro Ala Thr Tyr Cys
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Glu Ile Asp Leu Asp Lys Glu Lys Arg Asp Ala Phe Val Tyr Ala Ile
 65 70 75 80

Lys Asn His Tyr Trp Tyr Gln Met Tyr Ile Asp Asp Leu Pro Ile Trp
 85 90 95

Gly Ile Val Gly Glu Ala Asp Glu Asn Gly Glu Asp Tyr Tyr Leu Trp
 100 105 110

Thr Tyr Lys Lys Leu Glu Ile Gly Phe Asn Gly Asn Arg Ile Val Asp
 115 120 125

Val Asn Leu Thr Ser Glu Gly Lys Val Lys Leu Val Pro Asn Thr Lys
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Ile Gln Met Ser Tyr Ser Val Lys Trp Lys Lys Ser Asp Val Lys Phe
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Glu Asp Arg Phe Asp Lys Tyr Leu Asp Pro Ser Phe Phe Gln His Arg
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Ile His Trp Phe Ser Ile Phe Asn Ser Phe Met Met Val Ile Phe Leu
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Val Gly Leu Val Ser Met Ile Leu Met Arg Thr Leu Arg Lys Asp Tyr
 195 200 205

Ala Arg Tyr Ser Lys Glu Glu Glu Met Asp Asp Met Asp Arg Asp Leu
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Gly Asp Glu Tyr Gly Trp Lys Gln Val His Gly Asp Val Phe Arg Pro
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Leu Tyr Thr Glu Arg Gly Ser Met Leu Ser Thr Ala Ile Phe Val Tyr
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Arg Gln Gly Gly Arg Arg Trp Ile Lys Gln Met Phe Ile Gly Ala Phe
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3136

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<212> PRT

<213> Homo sapiens

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 Ala His Phe Leu His Gly Cys Asn Ser Lys Lys Ala Tyr Phe Leu Tyr
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 Val Asp Ser Leu Gly Pro Leu Glu Lys Gly Gln Val Lys Asn Glu Ala
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<211> 2472

<212> DNA

<213> Homo sapiens

<400> 29

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<211> 570

<212> PRT

<213> Homo sapiens

<400> 30

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Val Thr Ser Cys Tyr Gly Pro Ser Gly Arg Leu Lys Gln Leu His Asn
 35 40 45

Gly Phe Gly Gly Tyr Val Cys Thr Thr Ser Gln Ser Ser Ala Leu Leu
 50 55 60

Ser His Leu Leu Val Thr His Pro Ile Leu Lys Ile Leu Thr Ala Ser
 65 70 75 80

Ile Gln Asn His Val Ser Ser Phe Ser Asp Cys Gly Leu Phe Thr Ala
 85 90 95

Ile Leu Cys Cys Asn Leu Ile Glu Asn Val Gln Arg Leu Gly Leu Thr
 100 105 110
 Pro Thr Thr Val Ile Arg Leu Asn Lys His Leu Leu Ser Leu Cys Ile
 115 120 125
 Ser Tyr Leu Lys Ser Asp Thr Cys Gly Cys Arg Ile Pro Val Asp Phe
 130 135 140
 Ser Ser Thr Gln Ile Leu Leu Cys Leu Val Arg Ser Ile Leu Thr Ser
 145 150 155 160
 Lys Pro Ala Cys Met Leu Thr Arg Lys Glu Thr Glu His Val Ser Ala
 165 170 175
 Leu Ile Leu Arg Ala Phe Leu Leu Thr Ile Pro Glu Asn Ala Glu Gly
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 His Ile Ile Leu Gly Lys Ser Leu Ile Val Pro Leu Lys Gly Gln Arg
 195 200 205
 Val Ile Asp Ser Thr Val Leu Pro Gly Ile Leu Ile Glu Met Ser Glu
 210 215 220
 Val Gln Leu Met Arg Leu Leu Pro Ile Lys Lys Ser Thr Ala Leu Lys
 225 230 235 240
 Val Ala Leu Phe Cys Thr Thr Leu Ser Gly Asp Thr Ser Asp Thr Gly
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 Glu Gly Thr Val Val Val Ser Tyr Gly Val Ser Leu Glu Asn Ala Val
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 Leu Asp Gln Leu Leu Asn Leu Gly Arg Gln Leu Ile Ser Asp His Val
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 Met Glu Pro Leu Thr Lys Met Thr Gly Thr Gln Pro Ile Gly Ser Leu
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 Thr Ile Cys Ser Leu Leu Leu Cys Asn Arg Asn Asp Thr Ala Trp Asp
 370 375 380
 Glu Leu Lys Leu Thr Cys Gln Thr Ala Leu His Val Leu Gln Leu Thr
 385 390 395 400
 Leu Lys Glu Pro Trp Ala Leu Leu Gly Gly Gly Cys Thr Glu Thr His
 405 410 415

Leu Ala Ala Tyr Ile Arg His Lys Thr His Asn Asp Pro Glu Ser Ile
 420 425 430
 Leu Lys Asp Asp Glu Cys Thr Gln Thr Glu Leu Gln Leu Ile Ala Glu
 435 440 445
 Ala Phe Cys Ser Ala Leu Glu Ser Val Val Gly Ser Leu Glu His Asp
 450 455 460
 Gly Gly Glu Ile Leu Thr Asp Met Lys Tyr Gly His Leu Trp Ser Val
 465 470 475 480
 Gln Ala Asp Ser Pro Cys Val Ala Asn Trp Pro Asp Leu Leu Ser Gln
 485 490 495
 Cys Gly Cys Gly Leu Tyr Asn Ser Gln Glu Glu Leu Asn Trp Ser Phe
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 Leu Arg Ser Thr Arg Arg Pro Phe Val Pro Gln Ser Cys Leu Pro His
 515 520 525
 Glu Ala Val Gly Ser Ala Ser Asn Leu Thr Leu Asp Cys Leu Thr Ala
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 Lys Leu Ser Gly Leu Gln Val Ala Val Glu Thr Ala Asn Leu Ile Trp
 545 550 555 560
 Asp Leu Ser Tyr Val Ile Glu Asp Lys Asn
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<211> 1527

<212> DNA

<213> Homo sapiens

<400> 31

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<210> 32

<211> 315

<212> PRT

<213> Homo sapiens

<400> 32

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Asp Ala Ala Ala Ala Glu Glu Glu Asp Gly Glu Phe Leu Gly Met Lys
 35 40 45

Gly Phe Lys Gly Gln Leu Ser Arg Gln Val Ala Asp Gln Met Trp Gln
 50 55 60

Ala Gly Lys Arg Gln Ala Ser Arg Ala Phe Ser Leu Tyr Ala Asn Ile
 65 70 75 80

Asp Ile Leu Arg Pro Tyr Phe Asp Val Glu Pro Ala Gln Val Arg Ser
 85 90 95

Arg Leu Leu Glu Ser Met Ile Pro Ile Lys Met Val Asn Phe Pro Gln
 100 105 110

Lys Ile Ala Gly Glu Leu Tyr Gly Pro Leu Met Leu Val Phe Thr Leu
 115 120 125

Val Ala Ile Leu Leu His Gly Met Lys Thr Ser Asp Thr Ile Ile Arg
 130 135 140

Glu Gly Thr Leu Met Gly Thr Ala Ile Gly Thr Cys Phe Gly Tyr Trp
 145 150 155 160

Leu Gly Val Ser Ser Phe Ile Tyr Phe Leu Ala Tyr Leu Cys Asn Ala
 165 170 175

Gln Ile Thr Met Leu Gln Met Leu Ala Leu Leu Gly Tyr Gly Leu Phe
 180 185 190

Gly His Cys Ile Val Leu Phe Ile Thr Tyr Asn Ile His Leu His Ala
 195 200 205

Leu Phe Tyr Leu Phe Trp Arg Leu Val Gly Gly Leu Ser Thr Leu Arg
 210 215 220

Met Val Ala Val Leu Val Ser Arg Thr Val Gly Pro Thr Gln Arg Leu
 225 230 235 240

Leu Leu Cys Gly Thr Leu Ala Ala Leu His Met Leu Phe Leu Leu Tyr
 245 250 255

Leu His Phe Ala Tyr His Lys Val Val Glu Gly Ile Leu Asp Thr Leu

260

265

270

Glu Gly Pro Asn Ile Pro Pro Ile Gln Arg Val Pro Arg Asp Ile Pro
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Ala Met Leu Pro Ala Ala Arg Leu Pro Thr Thr Val Leu Asn Ala Thr
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Ala Lys Ala Val Ala Val Thr Leu Gln Ser His
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<210> 33

<211> 988

<212> DNA

<213> Homo sapiens

<400> 33

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<210> 34

<211> 107

<212> PRT

<213> Homo sapiens

<400> 34

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 20 25 30
 Ala Ala Trp Ser Gly Ser Gly Arg Ser Leu Val Pro Ser Arg Ser Val
 35 40 45
 Ile Val Thr Arg Ser Gly Ala Ile Leu Pro Lys Pro Val Lys Met Ser
 50 55 60
 Phe Gly Leu Leu Arg Val Phe Ser Ile Val Ile Pro Phe Leu Tyr Val
 65 70 75 80
 Gly Thr Leu Ile Ser Lys Asn Phe Ala Ala Leu Leu Glu Glu His Asp
 85 90 95

Ile Phe Val Pro Glu Asp Asp Asp Asp Asp Asp
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<210> 35
<211> 1759
<212> DNA
<213> Homo sapiens

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<210> 36
<211> 87
<212> PRT
<213> Homo sapiens

<400> 36
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Asn Leu Thr Val Gln Glu Leu Phe Leu Glu Leu Thr Pro Leu Leu Ser
20 25 30
Leu Met Cys Ile Pro Leu Cys Ala Phe Leu Tyr Asn His Ser Ser Phe
35 40 45
Asn Phe Pro Gly Glu Pro Ser Leu Ser Ala Ile Thr Thr Ser Phe Gln
50 55 60
Val Ser Ser Tyr Phe His His His Asn Gln Tyr Gly Ala Ile Ile Tyr

65 70 75 80

Leu Cys Thr Cys Ser Tyr Val
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<210> 37
<211> 643
<212> DNA
<213> Homo sapiens

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<210> 38
<211> 140
<212> PRT
<213> Homo sapiens

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Phe Leu Ile Lys Gly Ser Val Ala Gly Gly Ala Val Tyr Leu Val Tyr
35 40 45
Asp Gln Glu Leu Leu Gly Pro Ser Asp Lys Ser Gln Ala Ala Leu Gln
50 55 60
Lys Ala Gly Glu Val Val Pro Pro Ala Met Tyr Gln Phe Ser Gln Tyr
65 70 75 80
Val Cys Gln Gln Thr Gly Leu Gln Ile Pro Gln Leu Pro Ala Pro Pro
85 90 95
Lys Ile Tyr Phe Pro Ile Arg Asp Ser Trp Asn Ala Gly Ile Met Thr
100 105 110
Val Met Ser Ala Leu Ser Val Ala Pro Ser Lys Ala Arg Glu Tyr Ser
115 120 125
Lys Glu Gly Trp Glu Tyr Val Lys Ala Arg Thr Lys
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<210> 39
<211> 2015

<212> DNA

<213> Homo sapiens

<400> 39

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<210> 40

<211> 300

<212> PRT

<213> Homo sapiens

<400> 40

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      20                      25                      30

Leu Met Ser Tyr Arg Ile Ile Thr Asp Phe Pro Ser Leu Thr Arg Asn
      35                      40                      45

Leu Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His Gly Gln
      50                      55                      60

Phe Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp Tyr Ser
      65                      70                      75                      80

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Lys Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys Phe Gly
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 Ser Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala Ser Ala
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 Gln Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser Gln Phe
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 Ser Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser Ala
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 Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr Pro Ser
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 Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val Thr Thr
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 Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe Thr Arg
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 Thr Phe Gln Ala Pro Thr Asp Ser Lys Gly Ser Leu Glu Thr Ile Pro
 225 230 235 240
 Phe Thr Glu Ile Ser Asn Leu Thr Leu Asn Thr Gly Asn Val Tyr Asn
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 Pro Thr Ala Leu Ser Met Ser Asn Val Glu Ser Ser Thr Met Asn Lys
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 <213> Homo sapiens

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<211> 396

<212> PRT

<213> Homo sapiens

<400> 42

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 Ala Leu Arg His Leu Lys Val Val Cys Phe Arg Leu Ala Val Gly Pro
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 Cys Leu Met Glu Ala Ser Ala Ala Ala Val Phe Ser His Phe Ile Met
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 Lys Phe Pro Trp Gln Trp Ala Phe Leu Leu Gly Phe Val Leu Gly Ala
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 Val Ser Pro Ala Val Val Val Pro Tyr Met Met Val Leu Gln Glu Asn
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 Gly Tyr Gly Val Glu Glu Gly Ile Pro Thr Leu Leu Met Ala Ala Ser
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 Ser Met Asp Asp Ile Leu Ala Ile Thr Gly Phe Asn Thr Cys Leu Ser
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 Ile Val Phe Ser Ser Gly Gly Ile Leu Asn Asn Ala Ile Ala Ser Ile
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Arg Asn Val Cys Ile Ser Leu Leu Ala Gly Ile Val Leu Gly Phe Phe
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 Val Arg Tyr Phe Pro Ser Glu Asp Gln Lys Lys Leu Thr Leu Lys Arg
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 Phe Ile Ala Gly Thr Lys Trp Ser Gln Glu Lys Met Lys Val Gln Lys
 275 280 285
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 Val Gly Ala Glu Val Ser Val Ser Ser Leu Glu Ser Asn Ile Val Gly
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 Thr Tyr Leu Leu Met Cys Phe Ala Gly Phe Ser Phe Lys Glu Lys Ile
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 Phe Ile Ala Leu Ala Trp Met Pro Lys Ala Thr Val Gln Ile Asn Gln
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<212> PRT

<213> Homo sapiens

<400> 44

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 His Pro Leu Gln Gly Arg Lys Glu Lys Arg Val Asp Asn Ile Glu Ile
 50 55 60
 Gln Lys Phe Ile Ser Lys Lys Ala Asp Leu Leu Phe Ala Leu Ser Trp
 65 70 75 80
 Lys Ser Asp Ala Pro Ala Thr Ser Glu Ile Asn Glu Asp Ser Glu Asp
 85 90 95
 His Tyr Ala Ile Met Pro Pro Leu Glu Gln Phe Met Glu Ile Pro Ser
 100 105 110
 Met Asp Arg Arg Glu Leu Phe Phe Arg Asp Ile Glu Arg Gly Asp Ile
 115 120 125
 Val Ile Gly Arg Ile Ser Ser Ile Arg Glu Phe Gly Phe Phe Met Val
 130 135 140
 Leu Ile Cys Leu Gly Ser Gly Ile Met Arg Asp Ile Ala His Leu Glu
 145 150 155 160
 Ile Thr Ala Leu Cys Pro Leu Arg Asp Val Pro Ser His Ser Asn His
 165 170 175
 Gly Asp Pro Leu Ser Tyr Tyr Gln Thr Gly Asp Ile Ile Arg Ala Gly
 180 185 190
 Ile Lys Asp Ile Asp Arg Tyr His Glu Lys Leu Ala Val Ser Leu Tyr
 195 200 205
 Ser Ser Ser Leu Pro Pro His Leu Ser Gly Ile Lys Leu Gly Val Ile
 210 215 220
 Ser Ser Glu Glu Leu Pro Leu Tyr Tyr Arg Arg Ser Val Glu Leu Asn
 225 230 235 240
 Ser Asn Ser Leu Glu Ser Tyr Glu Asn Val Met Gln Ser Ser Leu Gly
 245 250 255
 Phe Val Asn Pro Gly Val Val Glu Phe Leu Leu Glu Lys Leu Gly Ile
 260 265 270
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 275 280 285
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<211> 4017
<212> DNA
<213> Homo sapiens
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<211> 1152

<212> PRT

<213> Homo sapiens

<400> 46

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Met Phe Glu Lys Ile His Gln Glu Thr Phe Gly Lys Ser Gly Cys Ser
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Arg Ile Val Pro Gly Gln Phe Leu Ala Val Asp Pro Lys Gly Arg Ala

50

55

60

Val Met Ile Ser Ala Ile Glu Lys Gln Lys Leu Val Tyr Ile Leu Asn
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 Arg Asp Ala Ala Ala Arg Leu Thr Ile Ser Ser Pro Leu Glu Ala His
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 Asn Asp Pro Thr Gly Glu Ala Ala Ala Asn Thr Gln Gln Thr Leu Thr
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 Phe Tyr Glu Leu Asp Leu Gly Leu Asn His Val Val Arg Lys Tyr Ser
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 Glu Pro Leu Glu Glu His Gly Asn Phe Leu Ile Thr Val Pro Gly Gly
 165 170 175
 Ser Asp Gly Pro Ser Gly Val Leu Ile Cys Ser Glu Asn Tyr Ile Thr
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 Tyr Lys Asn Phe Gly Asp Gln Pro Asp Ile Arg Cys Pro Ile Pro Arg
 195 200 205
 Arg Arg Asn Asp Leu Asp Asp Pro Glu Arg Gly Met Ile Phe Val Cys
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 Ser Ala Thr His Lys Thr Lys Ser Met Phe Phe Phe Leu Ala Gln Thr
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 Glu Gln Gly Asp Ile Phe Lys Ile Thr Leu Glu Thr Asp Glu Asp Met
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 Val Thr Glu Ile Arg Leu Lys Tyr Phe Asp Thr Val Pro Val Ala Ala
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 Ala Met Cys Val Leu Lys Thr Gly Phe Leu Phe Val Ala Ser Glu Phe
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 Gly Asn His Tyr Leu Tyr Gln Ile Ala His Leu Gly Asp Asp Asp Glu
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 Glu Pro Glu Phe Ser Ser Ala Met Pro Leu Glu Glu Gly Asp Thr Phe
 305 310 315 320
 Phe Phe Gln Pro Arg Pro Leu Lys Asn Leu Val Leu Val Asp Glu Leu
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 Asp Ser Leu Ser Pro Ile Leu Phe Cys Gln Ile Ala Asp Leu Ala Asn
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 Glu Asp Thr Pro Gln Leu Tyr Val Ala Cys Gly Arg Gly Pro Arg Ser
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 Ser Leu Arg Val Leu Arg His Gly Leu Glu Val Ser Glu Met Ala Val

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 Thr Leu Val Leu Ser Ile Gly Glu Thr Val Glu Glu Val Thr Asp Ser
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 Gly Phe Leu Gly Thr Thr Pro Thr Leu Ser Cys Ser Leu Leu Gly Asp
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 Asp Ala Leu Val Gln Val Tyr Pro Asp Gly Ile Arg His Ile Arg Ala
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 Asp Lys Arg Val Asn Glu Trp Lys Thr Pro Gly Lys Lys Thr Ile Val
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 Glu Leu Val Tyr Phe Glu Met Asp Pro Ser Gly Gln Leu Asn Glu Tyr
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 Val Asp Asn Thr Val Arg Ile Ile Ser Leu Asp Pro Ser Asp Cys Leu
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 Thr Leu Glu Phe Ala Ser Gly Phe Ala Ser Glu Gln Cys Pro Glu Gly
 675 680 685
 Ile Val Ala Ile Ser Thr Asn Thr Leu Arg Ile Leu Ala Leu Glu Lys

690	695	700
Leu Gly Ala Val Phe Asn Gln Val Ala Phe Pro Leu Gln Tyr Thr Pro 705	710	715 720
Arg Lys Phe Val Ile His Pro Glu Ser Asn Asn Leu Ile Ile Ile Glu 725	730	735
Thr Asp His Asn Ala Tyr Thr Glu Ala Thr Lys Ala Gln Arg Lys Gln 740	745	750
Gln Met Ala Glu Glu Met Val Glu Ala Ala Gly Glu Asp Glu Arg Glu 755	760	765
Leu Ala Ala Glu Met Ala Ala Ala Phe Leu Asn Glu Asn Leu Pro Glu 770	775	780
Ser Ile Phe Gly Ala Pro Lys Ala Gly Asn Gly Gln Trp Ala Ser Val 785	790	795 800
Ile Arg Val Met Asn Pro Ile Gln Gly Asn Thr Leu Asp Leu Val Gln 805	810	815
Leu Glu Gln Asn Glu Ala Ala Phe Ser Val Ala Val Cys Arg Phe Ser 820	825	830
Asn Thr Gly Glu Asp Trp Tyr Val Leu Val Gly Val Ala Lys Asp Leu 835	840	845
Ile Leu Asn Pro Arg Ser Val Ala Gly Gly Phe Val Tyr Thr Tyr Lys 850	855	860
Leu Val Asn Asn Gly Glu Lys Leu Glu Phe Leu His Lys Thr Pro Val 865	870	875 880
Glu Glu Val Pro Ala Ala Ile Ala Pro Phe Gln Gly Arg Val Leu Ile 885	890	895
Gly Val Gly Lys Leu Leu Arg Val Tyr Asp Leu Gly Lys Lys Lys Leu 900	905	910
Leu Arg Lys Cys Glu Asn Lys His Ile Ala Asn Tyr Ile Ser Gly Ile 915	920	925
Gln Thr Ile Gly His Arg Val Ile Val Ser Asp Val Gln Glu Ser Phe 930	935	940
Ile Trp Val Arg Tyr Lys Arg Asn Glu Asn Gln Leu Ile Ile Phe Ala 945	950	955 960
Asp Asp Thr Tyr Pro Arg Trp Val Thr Thr Ala Ser Leu Leu Asp Tyr 965	970	975
Asp Thr Val Ala Gly Ala Asp Lys Phe Gly Asn Ile Cys Val Val Arg 980	985	990
Leu Pro Pro Asn Thr Asn Asp Glu Val Asp Glu Asp Pro Thr Gly Asn 995	1000	1005
Lys Ala Leu Trp Asp Arg Gly Leu Leu Asn Gly Ala Ser Gln Lys Ala		

1010 1015 1020

Glu Val Ile Met Asn Tyr His Val Gly Glu Thr Val Leu Ser Leu Gln
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Lys Thr Thr Leu Ile Pro Gly Gly Ser Glu Ser Leu Val Tyr Thr Thr
1045 1050 1055

Leu Ser Gly Gly Ile Gly Ile Leu Val Pro Phe Thr Ser His Glu Asp
1060 1065 1070

His Asp Phe Phe Gln His Val Glu Met His Leu Arg Ser Glu His Pro
1075 1080 1085

Pro Leu Cys Gly Arg Asp His Leu Ser Phe Arg Ser Tyr Tyr Phe Pro
1090 1095 1100

Val Lys Asn Val Ile Asp Gly Asp Leu Cys Glu Gln Phe Asn Ser Met
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Glu Pro Asn Lys Gln Lys Asn Val Ser Glu Glu Leu Asp Arg Thr Pro
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Pro Glu Val Ser Lys Lys Leu Glu Asp Ile Arg Thr Arg Tyr Ala Phe
1140 1145 1150

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<211> 2635
<212> DNA
<213> Homo sapiens

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taattccact atagtgagg aggatttcca ttctaaatac ctatttttga gggatttata 360
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gtatttgaga gcactaggga agatgttttag tagctgtgtg gatgcctttt ttcacacct 480
gtctattgaa tgcgtcatcc attcacgaag ttaaatgtta catgcagtta gtccttaatg 540
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<211> 97

<212> PRT

<213> Homo sapiens

<400> 48

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 20 25 30

Ile Ser Phe Phe Phe Ile Phe Ala Phe Leu Ser Thr Ala Phe Arg Phe
 35 40 45

Ala Gly Asp Ala Ser Phe Ser Ser Met Phe Gly Phe Ser Gln Tyr Gly
 50 55 60

Asn Phe Arg Arg Thr Glu Arg Arg Glu Glu Glu Glu Ser Ile Leu
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Leu Gln Asn Phe Ser Asp Leu Leu Trp Gln Ser Ser Gly Arg Lys Val
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Phe

<210> 49

<211> 1594

<212> DNA

<213> Homo sapiens

<400> 49

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 gtggccacag cctgtctggt ggctttacta tttactttga ttcacccaag aagaagcagc 240
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 aagatatctg agaatcctag gagatcaccc acacatgaga agaatacgat gggagcaca 360
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<210> 50

<211> 141

<212> PRT

<213> Homo sapiens

<400> 50

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Ala Ala Gly Ile Pro Leu Leu Val Ala Thr Ala Leu Leu Val Ala Leu
      35             40             45

Leu Phe Thr Leu Ile His Pro Arg Arg Ser Ser Ile Glu Ala Met Glu
      50             55             60

Glu Ser Asp Arg Pro Cys Glu Ile Ser Glu Ile Asp Asp Asn Pro Lys
      65             70             75             80

Ile Ser Glu Asn Pro Arg Arg Ser Pro Thr His Glu Lys Asn Thr Met
      85             90             95

Gly Ala Gln Glu Ala His Ile Tyr Val Lys Thr Val Ala Gly Ser Glu
      100            105            110

Glu Pro Val His Asp Arg Tyr Arg Pro Thr Ile Glu Met Glu Arg Arg
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Arg Gly Leu Trp Trp Leu Val Pro Arg Leu Ser Leu Glu
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<210> 51

<211> 5160

<212> DNA

<213> Homo sapiens

<400> 51

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<210> 52

<211> 1135

<212> PRT

<213> Homo sapiens

<400> 52

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Arg Ile Tyr Glu Glu Gln Arg Val Gly Ser Val Ile Ala Arg Leu Ser
35 40 45
Glu Asp Val Ala Asp Val Leu Leu Lys Leu Pro Asn Pro Ser Thr Val
50 55 60
Arg Phe Arg Ala Met Gln Arg Gly Asn Ser Pro Leu Leu Val Val Asn
65 70 75 80
Glu Asp Asn Gly Glu Ile Ser Ile Gly Ala Thr Ile Asp Arg Glu Gln
85 90 95
Leu Cys Gln Lys Asn Leu Asn Cys Ser Ile Glu Phe Asp Val Ile Thr
100 105 110
Leu Pro Thr Glu His Leu Gln Leu Phe His Ile Glu Val Glu Val Leu
115 120 125
Asp Ile Asn Asp Asn Ser Pro Gln Phe Ser Arg Ser Leu Ile Pro Ile
130 135 140

Glu Ile Ser Glu Ser Ala Ala Val Gly Thr Arg Ile Pro Leu Asp Ser
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 Ala Phe Asp Pro Asp Val Gly Glu Asn Ser Leu His Thr Tyr Ser Leu
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 Ala Lys Tyr Ala Glu Leu Ile Val Val Arg Glu Leu Asp Arg Glu Leu
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 Lys Ser Ser Tyr Glu Leu Gln Leu Thr Ala Ser Asp Met Gly Val Pro
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 Gln Arg Ser Gly Ser Ser Ile Leu Lys Ile Ser Ile Ser Asp Ser Asn
 225 230 235 240
 Asp Asn Ser Pro Ala Phe Glu Gln Gln Ser Tyr Ile Ile Gln Leu Leu
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 Glu Asn Ser Pro Val Gly Thr Leu Leu Leu Asp Leu Asn Ala Thr Asp
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 Pro Asp Glu Gly Ala Asn Gly Lys Ile Val Tyr Ser Phe Ser Ser His
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 Val Ser Pro Lys Ile Met Glu Thr Phe Lys Ile Asp Ser Glu Arg Gly
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 His Leu Thr Leu Phe Lys Gln Val Asp Tyr Glu Ile Thr Lys Ser Tyr
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 Glu Ile Asp Val Gln Ala Gln Asp Leu Gly Pro Asn Ser Ile Pro Ala
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 His Cys Lys Ile Ile Ile Lys Val Val Asp Val Asn Asp Asn Lys Pro
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 Glu Ile Asn Ile Asn Leu Met Ser Pro Gly Lys Glu Glu Ile Ser Tyr
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 Ile Phe Glu Gly Asp Pro Ile Asp Thr Phe Val Ala Leu Val Arg Val
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 Gln Asp Lys Asp Ser Gly Leu Asn Gly Glu Ile Val Cys Lys Leu His
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 Gly His Gly His Phe Lys Leu Gln Lys Thr Tyr Glu Asn Asn Tyr Leu
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 Lys His Phe Thr Val Gln Ile Asn Asp Ile Asn Asp Asn Pro Pro His
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Phe Gln Arg Ser Arg Tyr Glu Phe Val Ile Ser Glu Asn Asn Ser Pro
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 Asn Gly Gln Val Thr Tyr Thr Ile Leu Glu Ser Phe Ile Leu Gly Ser
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 Gly Ala Glu Ser Gly Phe His Val Thr Arg Ile Arg Ala Ile Asp Arg
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 Asp Ser Gly Val Asn Ala Glu Leu Ser Cys Ala Ile Val Ala Gly Asn
 610 615 620
 Glu Glu Asn Ile Phe Ile Ile Asp Pro Arg Ser Cys Asp Ile His Thr
 625 630 635 640
 Asn Val Ser Met Asp Ser Val Pro Tyr Thr Glu Trp Glu Leu Ser Val
 645 650 655
 Ile Ile Gln Asp Lys Gly Asn Pro Gln Leu His Thr Lys Val Leu Leu
 660 665 670
 Lys Cys Met Ile Phe Glu Tyr Ala Glu Ser Val Thr Ser Thr Ala Met
 675 680 685
 Thr Ser Val Ser Gln Ala Ser Leu Asp Val Ser Met Ile Ile Ile Ile
 690 695 700
 Ser Leu Gly Ala Ile Cys Ala Val Leu Leu Val Ile Met Val Leu Phe
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 Ala Thr Arg Cys Asn Arg Glu Lys Lys Asp Thr Arg Ser Tyr Asn Cys
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 Arg Val Ala Glu Ser Thr Tyr Gln His His Pro Lys Arg Pro Ser Arg
 740 745 750
 Gln Ile His Lys Gly Asp Ile Thr Leu Val Pro Thr Ile Asn Gly Thr
 755 760 765
 Leu Pro Ile Arg Ser His His Arg Ser Ser Pro Ser Ser Ser Pro Thr
 770 775 780

Leu Glu Arg Gly Gln Met Gly Ser Arg Gln Ser His Asn Ser His Gln
 785 790 795 800
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 805 810 815
 Phe Ser Leu Glu Leu Thr His Ala Thr Pro Ala Val Glu Gln Val Ser
 820 825 830
 Gln Leu Leu Ser Met Leu His Gln Gly Gln Tyr Gln Pro Arg Pro Ser
 835 840 845
 Phe Arg Gly Asn Lys Tyr Ser Arg Ser Tyr Arg Tyr Ala Leu Gln Asp
 850 855 860
 Met Asp Lys Phe Ser Leu Lys Asp Ser Gly Arg Gly Asp Ser Glu Ala
 865 870 875 880
 Gly Asp Ser Asp Tyr Asp Leu Gly Arg Asp Ser Pro Ile Asp Arg Leu
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 Leu Gly Glu Gly Phe Ser Asp Leu Phe Leu Thr Asp Gly Arg Ile Pro
 900 905 910
 Ala Ala Met Arg Leu Cys Thr Glu Glu Cys Arg Val Leu Gly His Ser
 915 920 925
 Asp Gln Cys Trp Met Pro Pro Leu Pro Ser Pro Ser Ser Asp Tyr Arg
 930 935 940
 Ser Asn Met Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln Gln
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 Gln His Pro His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp Ser
 965 970 975
 Gly Glu Lys Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro Asn
 980 985 990
 Asp Glu Asp Thr Gly Asp Thr Ser Thr Ser Ser Leu Leu Ser Glu Met
 995 1000 1005
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 Pro Leu Pro Ala Lys Thr Val Gly Tyr Pro Gln Gly Val Ala Ala Trp
 1045 1050 1055
 Ala Ala Ser Thr His Phe Gln Asn Pro Thr Thr Asn Cys Gly Pro Pro
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 Leu Gly Thr His Ser Ser Val Gln Pro Ser Ser Lys Trp Leu Pro Ala
 1075 1080 1085
 Met Glu Glu Ile Pro Glu Asn Tyr Glu Glu Asp Asp Phe Asp Asn Val
 1090 1095 1100

Leu Asn His Leu Asn Asp Gly Lys His Glu Leu Met Asp Ala Ser Glu
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 <211> 1207
 <212> DNA
 <213> Homo sapiens

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 <211> 281
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Leu Pro Glu Asn Lys Pro Cys Tyr Leu Leu Asp Ile Gly Cys Gly Thr
 50 55 60
 Gly Leu Ser Gly Ser Tyr Leu Ser Asp Glu Gly His Tyr Trp Val Gly
 65 70 75 80
 Leu Asp Ile Ser Pro Ala Met Leu Asp Glu Ala Val Asp Arg Glu Ile
 85 90 95
 Glu Gly Asp Leu Leu Leu Gly Asp Met Gly Gln Gly Ile Pro Phe Lys

100 105 110
 Pro Gly Thr Phe Asp Gly Cys Ile Ser Ile Ser Ala Val His Trp Leu
 115 120 125
 Cys Asn Ala Asn Lys Lys Ser Glu Asn Pro Ala Lys Arg Leu Tyr Cys
 130 135 140
 Phe Phe Ala Ser Leu Phe Ser Val Leu Val Arg Gly Ser Arg Ala Val
 145 150 155 160
 Leu Gln Leu Tyr Pro Glu Asn Ser Glu Gln Leu Glu Leu Ile Thr Thr
 165 170 175
 Gln Ala Thr Lys Ala Gly Phe Ser Gly Gly Met Val Val Asp Tyr Pro
 180 185 190
 Asn Ser Ala Lys Ala Lys Lys Phe Tyr Leu Cys Leu Phe Ser Gly Pro
 195 200 205
 Ser Thr Phe Ile Pro Glu Gly Leu Ser Glu Asn Gln Asp Glu Val Glu
 210 215 220
 Pro Arg Glu Ser Val Phe Thr Asn Glu Arg Phe Pro Leu Arg Met Ser
 225 230 235 240
 Arg Arg Gly Met Val Arg Lys Ser Arg Ala Trp Val Leu Glu Lys Lys
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<210> 56

<211> 208

<212> PRT

<213> Homo sapiens

<400> 56

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Pro Thr Val Leu Arg Trp Ala Val Val Glu Ala Leu Leu Pro Ala Val
35 40 45

Cys Gly Thr Ser Pro Ala Leu Phe Phe Pro Val Pro Ile Gly Ser Leu
50 55 60

Arg Ala Arg Val Phe His Ser Lys Thr Val Leu Cys Asn Ser Phe Gln
65 70 75 80

Gln Ser Asn Asn Pro Pro Leu Gln Arg Ser Ser Ser Leu Ile Gln Leu
85 90 95

Thr Ser Gln Asn Ser Ser Pro Asn Gln Gln Arg Thr Pro Gln Val Ile
100 105 110

Gly Val Met Gln Ser Gln Asn Ser Ser Gly Gly Asn Arg Gly Pro Gly
115 120 125

His Trp Ser Arg Ser Pro Val Thr Ser Val Ala Arg Lys Asp Thr Thr
130 135 140

Pro Thr Asp Ala Pro Lys Gly Thr Trp Pro Phe Ser Val Asp Ser Asp
145 150 155 160

Ser Ser Trp Ser Gln Leu Arg Ala Ala Arg Gly Pro Arg Cys Trp Glu
165 170 175

Cys Ala Phe Asn Cys Phe Met Arg Leu Leu Ala Arg Leu Trp Leu Glu
180 185 190

Leu Ala Arg Arg His Val Gly Phe Ile Thr Leu Arg Gly His Val Cys
195 200 205

<210> 57

<211> 4184

<212> DNA

<213> Homo sapiens

<400> 57

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<211> 306

<212> PRT

<213> Homo sapiens

<400> 58

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 35 40 45
 Lys Val Arg Arg Ser Thr Ser Arg Asp Arg Leu Asp Asp Ile Ile Val
 50 55 60
 Leu Thr Lys Asp Ile Gln Glu Gly Asp Thr Leu Asn Ala Ile Ala Leu
 65 70 75 80
 Gln Tyr Cys Cys Thr Val Ala Asp Ile Lys Arg Val Asn Asn Leu Ile
 85 90 95
 Ser Asp Gln Asp Phe Phe Ala Leu Arg Ser Ile Lys Ile Pro Val Lys
 100 105 110
 Lys Phe Ser Ser Leu Thr Glu Thr Leu Cys Pro Pro Lys Gly Arg Gln
 115 120 125
 Thr Ser Arg His Ser Ser Val Gln Tyr Ser Ser Glu Gln Gln Glu Ile
 130 135 140
 Leu Pro Ala Asn Asp Ser Leu Ala Tyr Ser Asp Ser Ala Gly Ser Phe
 145 150 155 160
 Leu Lys Glu Val Asp Arg Asp Ile Glu Gln Ile Val Lys Cys Thr Asp
 165 170 175
 Asn Lys Arg Glu Asn Leu His Glu Val Val Ser Ala Phe Thr Ala Gln
 180 185 190
 Gln Met Arg Phe Glu Pro Asp Asn Lys Asn Thr Gln Arg Lys Asp Pro
 195 200 205
 Tyr Tyr Gly Ala Asp Trp Gly Ile Gly Trp Trp Thr Ala Val Val Ile
 210 215 220
 Met Leu Ile Val Gly Ile Ile Thr Pro Val Phe Tyr Leu Leu Tyr Tyr

225 230 235 240
 Glu Ile Leu Ala Lys Val Asp Val Ser His His Ser Thr Val Asp Ser
 245 250 255
 Ser His Leu His Ser Lys Ile Thr Pro Pro Ser Gln Gln Arg Glu Met
 260 265 270
 Glu Asn Gly Ile Val Pro Thr Lys Gly Ile His Phe Ser Gln Gln Asp
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 Asp His Lys Leu Tyr Ser Gln Asp Ser Gln Ser Pro Ala Ala Gln Gln
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 Glu Thr
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<210> 59
 <211> 3191
 <212> DNA
 <213> Homo sapiens

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<210> 60

<211> 568

<212> PRT

<213> Homo sapiens

<400> 60

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Phe Met Ser Lys Val Ile Gly Ala Asn Lys Asn Gln Glu Glu Glu Lys
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Ser Gly Lys Trp Glu Gly Leu Val Tyr Ala Pro Pro Gly Lys Glu Lys
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Thr Arg Glu Ala Gln Val Asn Val Arg Met Asp Ser Phe Asp Glu Asp
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 Ala Gln His Ile Val Thr Ile Val His His Val Lys Glu His His Phe
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 Gly Ser Ser Gly Met Thr Leu His Glu Arg Phe Thr Lys Tyr Leu Lys
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 Arg Gly Thr Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser Pro Glu Ile
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 Gly Lys Tyr Lys Asp Asp Pro Val Asp Leu Arg Leu Asp Ile Glu Arg
 325 330 335
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 355 360 365
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 370 375 380
 Arg Ala Arg Asp Arg Ser Arg Ser Ser Ser Ser Ser Gln Ser Ser
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 His Ser Tyr Lys Ala Glu Glu Tyr Thr Glu Glu Thr Glu Glu Arg Glu
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 Glu Ser Thr Thr Gly Phe Asp Lys Ser Arg Leu Gly Thr Lys Asp Phe
 420 425 430
 Val Gly Pro Ser Glu Arg Gly Gly Gly Arg Ala Arg Gly Thr Phe Gln
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 Phe Arg Ala Arg Gly Arg Gly Trp Gly Arg Gly Asn Tyr Ser Gly Asn
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 465 470 475 480
 Glu Trp Asp Pro Glu Tyr Thr Pro Lys Ser Lys Lys Tyr Asn Leu His
 485 490 495
 Asp Asp Arg Glu Gly Glu Gly Ser Asp Lys Trp Val Ser Arg Gly Arg
 500 505 510

Gly Arg Gly Ala Phe Pro Arg Gly Arg Gly Arg Phe Met Phe Arg Lys
515 520 525

Ser Ser Thr Ser Pro Lys Trp Ala His Asp Lys Phe Ser Gly Glu Glu
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Asp Asn Ile Gln Pro Thr Thr Glu
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<210> 61

<211> 3145

<212> DNA

<213> Homo sapiens

<400> 61

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<211> 574

<212> PRT

<213> Homo sapiens

<400> 62

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 Tyr Ser Asp Val Val Asp Glu Arg Ser Ile Val Lys Leu Cys Gly Tyr
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 Pro Leu Cys Gln Lys Lys Leu Gly Ile Val Pro Lys Gln Lys Tyr Lys
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 Ile Ser Thr Lys Thr Asn Lys Val Tyr Asp Ile Thr Glu Arg Lys Ser
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 Phe Cys Ser Asn Phe Cys Tyr Gln Ala Ser Lys Phe Phe Glu Ala Gln
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 Ile Pro Lys Thr Pro Val Trp Val Arg Glu Glu Glu Arg His Pro Asp
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 130 135 140
 Gln Leu Cys Ser Lys Ala Ile Lys Thr Ser Asp Ile Asp Asn Pro Ser
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 His Phe Glu Lys Gln Tyr Glu Ser Ser Ser Ser Ser Thr His Ser Asp
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 Asn Arg Pro Asn Ser Thr Asn Ile Arg Pro Gln Leu His Gln Lys Ser
 195 200 205

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 225 230 235 240
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 Ala Ser Glu Asn Ser Glu Ser Glu Tyr Ser Arg Ser Glu Ile Thr Leu
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 435 440 445
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 Lys Arg Ile Val Leu Glu Lys Leu Ser Lys Val Leu Pro Gly Leu Leu
 465 470 475 480
 Val Pro Leu Gln Ile Thr Leu Gly Asp Ile Tyr Thr Gln Leu Lys Asn
 485 490 495
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 Ala Glu Trp Thr Leu Ile Ala Met Val Leu Leu Ser Leu Leu Thr Pro
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Ile Leu Gly Ile Gln Lys His Ser Gln Glu Gly Met Val Phe Thr Arg
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<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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20 25 30

Ser Ile Phe Phe Phe Phe Leu Ser Pro Asn Leu Asn Arg Ser Lys Met
 35 40 45

Cys Ser Gly Ile Pro Gly Asn Arg Cys Val Cys Lys Val Lys Asn Arg
 50 55 60

Leu Phe Arg Asn Ser Leu Phe Arg Tyr Leu His Pro Ala Ser His Val
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Lys Tyr Leu Ser Leu Lys Gly Leu Arg Cys Thr Ser Phe Ile Ser Tyr
 85 90 95

Phe Ser

<210> 65

<211> 1558

<212> DNA

<213> Homo sapiens

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<210> 66

<211> 437

<212> PRT

<213> Homo sapiens

<400> 66

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 50 55 60
 Ser Ile Thr Gly Ile Trp Thr Val Tyr Ala Met Ala Val Met Asn His
 65 70 75 80
 His Val Cys Pro Val Glu Asn Trp Ser Tyr Asn Glu Ser Cys Pro Pro
 85 90 95
 Asp Pro Ala Glu Gln Gly Gly Pro Lys Thr Cys Cys Thr Leu Asp Asp
 100 105 110
 Val Pro Leu Ile Ser Lys Cys Gly Ser Tyr Pro Pro Glu Ser Cys Leu
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 145 150 155 160
 Asn Thr Thr Ala Leu Ile Thr Gly Cys Thr Asn Ala Ala Gly Leu Leu
 165 170 175
 Val Val Gly Asn Phe Gln Val Asp His Ala Arg Ser Leu His Tyr Val
 180 185 190
 Gly Ala Gly Val Ala Phe Pro Ala Gly Leu Leu Phe Val Cys Leu His
 195 200 205
 Cys Leu Ser Pro Thr Lys Gly Pro Pro Pro Arg Trp Thr Trp Leu Trp
 210 215 220
 Pro Ile Cys Glu Val Cys Trp Leu Ser Ser Pro Leu Ser Pro Trp Ser
 225 230 235 240
 Ser Val Glu Ser Ser Leu Ser Met Arg Val Leu Ser Cys Asn Met Gly
 245 250 255
 Gln Pro Cys Val Ser Gly Cys Val Ser Ser Ile Ser Ser Phe Ser Met
 260 265 270
 Ala Pro Ser Ala Thr Ser Leu Gly Gln Ser Pro Gln Thr His Trp Trp
 275 280 285
 Leu His Cys Ser Leu Pro Leu Ala Gly Pro Ala Ser Pro Pro Gly Ala
 290 295 300
 Ala Ala Leu His Pro Pro Gln Leu Cys Pro Arg Glu His Arg Tyr Asp
 305 310 315 320
 Leu Arg Ser Gly Glu Gly Gly Trp Pro Gly Ser Thr Ala Pro His Pro
 325 330 335
 Ile Ser Ser Phe His Leu Phe Arg Thr Lys Asn Asn Phe Glu Lys Val

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 His Asp Leu Leu Pro Thr Pro Arg Cys Arg Phe Val Phe Lys Gly His
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<210> 67

<211> 2336

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (418)

<400> 67

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<210> 68

<211> 473

<212> PRT

<213> Homo sapiens

<400> 68

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Glu Val Glu Asn Gly Gln Ile Asn Ser Lys Phe Ile Ser Asp Arg Glu
 35 40 45

Ser Arg Arg Ser Leu Thr Asn Ser His Leu Glu Lys Lys Lys Cys Asp
 50 55 60

Glu Tyr Ile Pro Gly Thr Thr Ser Leu Gly Met Phe Val Phe Asn Leu
 65 70 75 80

Ser Asn Ser Met Met Gly Ser Gly Ile Trp Asp Ser Leu Cys Pro Gly
 85 90 95

Asn Thr Gly Ile Leu Leu Phe Leu Val Leu Leu Thr Ser Val Thr Leu
 100 105 110

Leu Ser Ile Tyr Ser Ile Asn Leu Leu Leu Ile Cys Ser Lys Glu Thr
 115 120 125

Gly Cys Met Val Tyr Glu Lys Leu Gly Glu Gln Val Phe Gly Thr Thr
 130 135 140

Gly Lys Phe Val Ile Phe Gly Ala Thr Ser Leu Gln Asn Thr Gly Ala
 145 150 155 160

Met Leu Ser Tyr Leu Phe Ile Val Lys Asn Glu Leu Pro Ser Ala Ile
 165 170 175

Lys Phe Leu Met Gly Lys Glu Glu Thr Phe Ser Ala Trp Tyr Val Asp
 180 185 190

Gly Arg Val Leu Val Val Ile Val Thr Phe Gly Ile Ile Leu Pro Leu
 195 200 205

Cys Leu Leu Lys Asn Leu Gly Tyr Leu Gly Tyr Thr Ser Gly Phe Ser
 210 215 220

Leu Ser Cys Met Val Phe Phe Leu Ile Val Val Ile Tyr Lys Lys Phe

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 Tyr Phe Leu Thr Ala Ile Phe Gly Tyr Leu Thr Phe Tyr Asp Asn Val
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 Gln Ser Asp Leu Leu His Lys Tyr Gln Ser Lys Asp Asp Ile Leu Ile
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 Val Val Ile Asn Leu Leu Val Ile Phe Ile Pro Ser Met Lys Asp Ile
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 Phe Gly Val Val Gly Val Thr Ser Ala Asn Met Leu Ile Phe Ile Leu
 420 425 430
 Pro Ser Ser Leu Tyr Leu Lys Ile Thr Asp Gln Asp Gly Asp Lys Gly
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<210> 69

<211> 1999

<212> DNA

<213> Homo sapiens

<400> 69

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1999

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<210> 70

<211> 153

<212> PRT

<213> Homo sapiens

<400> 70

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      20              25              30

Ala Asn Lys Met Phe Ile Gly Trp Ser Gln Leu Thr Met Tyr Tyr Trp
      35              40              45

Gln His Phe Leu Asp Gly Tyr Leu Leu Gly Pro Phe Ile Arg Lys Arg
      50              55              60

Glu Arg Met Gly Trp Phe Cys Met Gly Ser Cys Leu Gly Val Lys Ile
      65              70              75              80

Ala Glu Ser Val Ala Glu Asp Asn Asp Leu Pro Tyr Asn Ile Ser Phe
      85              90              95

Ile Pro Ile Leu Gly Leu Val Leu Arg Thr Leu Tyr Met Cys Leu Phe
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Thr Ser Gly Leu Pro Ala Ile Ala Phe Leu Pro Phe Phe Pro Ile Leu
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Arg Ile Lys Lys Lys Asn Tyr Arg Ala Ser Lys Gly Gly Arg Lys

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130

135

140

Gln Lys Ser Asn Phe Ile Ile Pro Val
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<210> 71

<211> 2020

<212> DNA

<213> Homo sapiens

<400> 71

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<210> 72

<211> 104

<212> PRT

<213> Homo sapiens

<400> 72

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Gln Tyr Ala Pro Ala Leu Pro Pro Pro Ala Gly Asn Val Leu Ala Ser
      20             25             30

Gln Pro Ser Thr Ile Cys Ser Pro Ile Leu Leu Arg Gly Gln Pro Ser

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35 40 45
 Leu Gly His Pro Leu Phe Pro Ser Ser Ser Ala Pro Thr Gln Val Thr
 50 55 60
 Asp Pro Ala Asp Ser Phe Ser Leu Gly Lys Val Gly Cys Cys Leu Thr
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 Pro Gly Arg Leu Val Ser His Met
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<210> 73
 <211> 760
 <212> DNA
 <213> Homo sapiens

<400> 73
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<210> 74
 <211> 102
 <212> PRT
 <213> Homo sapiens

<400> 74
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 Ile Val Gly Phe Ile Tyr Gly Tyr Val Ala Glu Gln Phe Gly Trp Thr
 35 40 45
 Val Tyr Ile Val Met Ala Gly Phe Ala Phe Ser Cys Leu Leu Thr Leu
 50 55 60
 Pro Pro Trp Pro Ile Tyr Arg Arg His Pro Leu Lys Trp Leu Pro Val
 65 70 75 80
 Gln Glu Ser Ser Thr Asp Asp Lys Lys Pro Gly Glu Arg Lys Ile Lys
 85 90 95
 Arg His Ala Lys Asn Asn

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<210> 75
 <211> 875
 <212> DNA
 <213> Homo sapiens

<400> 75
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<210> 76
 <211> 112
 <212> PRT
 <213> Homo sapiens

<400> 76
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 Ala Glu Gly Ala Gly Leu Arg Leu Cys Thr Cys Ser Leu His Ala Thr
 35 40 45
 Leu Gly Leu Cys Trp Arg Arg Ser Pro Ser Phe Trp Val Gln Thr Ala
 50 55 60
 Pro Pro Asp Ala Val Leu Met Ser Ile Phe Gln Glu Arg Asp Gly Leu
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 Gly Ser Arg Glu Trp Arg Gly Leu Pro Leu Pro Cys Arg Ser Trp Pro
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 Met Ala Pro Tyr Pro Ala Ala Leu Gly Phe Trp Pro Glu Ala Asn Ser
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<210> 77
 <211> 2848
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure

<222> (2526)

<400> 77

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<210> 78

<211> 532

<212> PRT

<213> Homo sapiens

<400> 78

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 Asn Val Gln Ser Leu Leu Asp Ala Ala Asn Gln Tyr Gln Ile Glu Pro
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 Val Lys Lys Met Cys Val Asp Phe Leu Lys Glu Gln Val Asp Ala Ser
 85 90 95
 Asn Cys Leu Gly Ile Ser Val Leu Ala Glu Cys Leu Asp Cys Pro Glu
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 Leu Lys Ala Thr Ala Asp Asp Phe Ile His Gln His Phe Thr Glu Val
 115 120 125
 Tyr Lys Thr Asp Glu Phe Leu Gln Leu Asp Val Lys Arg Val Thr His
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 Asp Ala Ala Val Arg Trp Leu Lys Tyr Asp Glu Pro Asn Arg Gln Pro
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 Asn Phe Leu Ser Lys Thr Val Gln Ala Glu Pro Leu Ile Gln Asp Asn
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 Pro Glu Cys Leu Lys Met Val Ile Ser Gly Met Arg Tyr His Leu Leu
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 Ser Pro Glu Asp Arg Glu Glu Leu Val Asp Gly Pro Arg Pro Arg Arg
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 Lys Lys His Asp Tyr Arg Ile Ala Leu Phe Gly Gly Ser Gln Pro Gln
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 Ser Cys Arg Tyr Phe Asn Pro Lys Asp Tyr Ser Trp Thr Asp Ile Arg
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 Cys Pro Phe Glu Lys Pro Arg Asp Ala Ala Cys Val Phe Trp Asp Asn
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 Asp Cys Tyr Asn Val Val Lys Asp Ser Trp Tyr Ser Lys Leu Gly Pro
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 Pro Thr Pro Arg Asp Ser Leu Ala Ala Cys Ala Ala Glu Gly Lys Ile
 325 330 335

Tyr Thr Ser Gly Gly Ser Glu Val Gly Asn Ser Ala Leu Tyr Leu Phe
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 Glu Cys Tyr Asp Thr Arg Thr Glu Ser Trp His Thr Lys Pro Ser Met
 355 360 365
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 Tyr Val Cys Gly Gly Ser Leu Gly Asn Asn Val Ser Gly Arg Val Leu
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 Asn Ser Cys Glu Val Tyr Asp Pro Ala Thr Glu Thr Trp Thr Glu Leu
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 Cys Pro Met Ile Glu Ala Arg Lys Asn His Gly Leu Val Phe Val Lys
 420 425 430
 Asp Lys Ile Phe Ala Val Gly Gly Gln Asn Gly Leu Gly Gly Leu Asp
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 Pro Met Pro Trp Lys Gly Val Thr Val Lys Cys Ala Ala Val Gly Ser
 465 470 475 480
 Ile Val Tyr Val Leu Ala Gly Phe Gln Gly Val Gly Arg Leu Gly His
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 Ile Leu Gln Tyr Asn Thr Glu Thr Asp Lys Trp Val Ala Asn Ser Gln
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 Leu Trp Ser Lys
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 <213> Homo sapiens

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<211> 525

<212> PRT

<213> Homo sapiens

<400> 80

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 35 40 45

His Leu Thr Leu Leu Lys Phe Phe Phe Asn Leu Ile Glu Ser Glu Val
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Gln His Leu Ser Gln Lys Leu Tyr Asp Trp Ser Asp Ser Gln Asn Leu
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Lys Ile Thr Gly Lys Ala Met Leu Leu Glu Ile Phe Trp Ser Gly Ser
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Glu Thr Ser Gly Leu Leu Thr Lys Pro Val Asn Met Leu Leu Glu Trp
 100 105 110

Thr Ile Tyr Ser His Lys Glu Lys Phe Lys Ser Asn Asp Thr Phe Leu
 115 120 125

Pro Gln Glu Leu Glu Ile Phe Ile Cys Ser Phe Ser Ser Ser Trp Leu
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 Gln Met Phe Val Ala Glu Ala Val Phe Lys Lys Leu Cys Leu Gln Ser
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 Ser Gly Ser Val Ser Ser Glu Pro Leu Ser Leu Gln Lys Met Val Tyr
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 Ser Tyr Leu Pro Ala Leu Gly Lys Thr Gly Val Leu Gly Ser Gly Lys
 180 185 190
 Ile Gln Val Ser Lys Lys Ile Gly Gln Arg Pro Cys Phe Asp Ser Gln
 195 200 205
 Arg Thr Leu Leu Met Leu Asn Gly Thr Lys Gln Lys Gln Val Glu Gly
 210 215 220
 Leu Pro Glu Leu Leu Asp Leu Asn Leu Ala Lys Cys Ser Ser Ser Leu
 225 230 235 240
 Lys Lys Leu Lys Lys Lys Ser Glu Gly Glu Leu Ser Cys Ser Lys Glu
 245 250 255
 Asn Cys Pro Ser Val Val Lys Lys Met Asn Phe His Lys Thr Asn Leu
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 Lys Gly Glu Thr Ala Leu His Arg Ala Cys Ile Asn Asn Gln Val Glu
 275 280 285
 Lys Leu Ile Leu Leu Leu Ser Leu Pro Gly Ile Asp Ile Asn Val Lys
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 Asp Asn Ala Gly Trp Thr Pro Leu His Glu Ala Cys Asn Tyr Gly Asn
 305 310 315 320
 Thr Val Gly Val Gln Glu Ile Leu Gln Arg Cys Pro Glu Val Asp Leu
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 Gly His Val Glu Ile Gly Lys Leu Leu Leu Gln His Gly Gly Pro Val
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 Val Ser Pro Gln Ile Lys Glu Glu Leu Phe Ala Ile Thr Lys Ile Glu
 385 390 395 400
 Asp Thr Val Glu Asn Phe His Ala Gln Ala Glu Lys His Phe His Tyr
 405 410 415
 Gln Gln Leu Glu Phe Gly Ser Phe Leu Leu Ser Arg Met Leu Leu Asn
 420 425 430
 Phe Cys Ser Ile Phe Asp Leu Ser Ser Glu Phe Ile Leu Ala Ser Lys
 435 440 445

Gly Leu Thr His Leu Asn Glu Leu Leu Met Ala Cys Lys Ser His Lys
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Glu Thr Thr Ser Val His Thr Asp Trp Leu Leu Asp Leu Tyr Ala Gly
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Asn Ile Lys Thr Leu Gln Lys Leu Pro His Ile Leu Lys Glu Leu Pro
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<210> 81

<211> 2625

<212> DNA

<213> Homo sapiens

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<221> unsure

<222> (2559)

<220>

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<222> (2561)

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<211> 490

<212> PRT

<213> Homo sapiens

<400> 82

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 35 40 45
 Leu Pro Leu Ser Ala Thr Cys Ala Leu Phe Glu Val Met Ser Thr Pro
 50 55 60
 Ala Ala Gly Pro Ala Val Leu Glu Leu Tyr Pro Gln Leu Phe Val Val
 65 70 75 80
 Leu Leu Leu Arg Val Ser Cys Thr Val Gly Val Gln Leu Pro Arg Asn
 85 90 95
 Leu Gln Ala Gln Glu Arg Arg Gly Ala Ser Pro Ala Leu Ala Thr Arg
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 Asn Leu Glu Pro Cys Ser Ser Ala Val Asp Thr Leu Arg Ser Met Leu
 115 120 125
 Leu Arg Ser Gly Ser Glu Asp Val Val Gln Arg Met Asp Leu Glu Gly
 130 135 140
 Gly Trp Glu Leu Leu Arg Thr Ser Ala Gly His Glu Glu Gly Ala Thr
 145 150 155 160
 Arg Leu Ala Arg Ala Met Ala Glu His Ala Gly Pro Arg Leu Pro Leu
 165 170 175
 Val Leu Lys Thr Leu Ala Cys Thr His Ser Ser Ala Tyr Glu Asn Gln
 180 185 190
 Arg Val Thr Thr Thr Ala Phe Leu Ala Glu Leu Leu Asn Ser Asn Val
 195 200 205

Ala Asn Asp Leu Met Leu Leu Asp Ser Leu Leu Glu Ser Leu Ala Ala
 210 215 220
 Arg Gln Lys Asp Thr Cys Ala Ser Val Arg Arg Leu Val Leu Arg Gly
 225 230 235 240
 Leu Ala Asn Leu Ala Ser Gly Cys Pro Asp Lys Val Arg Thr His Gly
 245 250 255
 Pro Gln Leu Leu Thr Ala Met Ile Gly Gly Leu Asp Asp Gly Asp Asn
 260 265 270
 Pro His Ser Pro Val Ala Leu Glu Ala Met Leu Gly Leu Ala Arg Leu
 275 280 285
 Val His Leu Val Glu Ser Trp Asp Leu Arg Ser Gly Leu Leu His Val
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 Thr Ala Ser Ile Arg Leu Phe Gly His Leu Asn Lys Val Cys His Gly
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 370 375 380
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 Gly Glu Phe Leu Asn Thr Thr Cys Lys His Leu Met His His Phe Pro
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 <212> DNA
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<400> 83

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<210> 84

<211> 382

<212> PRT

<213> Homo sapiens

<400> 84

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Thr Ala Val Gln Leu Ser Glu Leu Leu Thr Leu Pro Val Leu Met Lys
      35             40             45

Arg Ser Ile Thr Ala Pro Leu Ala Ala His Ile Ser Leu Val Asn Lys
      50             55             60

Ala Ala Val Asp Tyr Phe Phe Val Glu Leu His Leu Glu Ala His Tyr
      65             70             75             80

Glu Ala Leu Arg His Phe Leu Leu Met Glu Asp Gly Glu Phe Ala Gln
      85             90             95

Ser Leu Ser Asp Leu Leu Phe Glu Lys Leu Gly Ala Gly Gln Thr Pro
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Arg Arg Ala Ala Gln Pro Ala Gly Ala Glu Leu Cys Ala Asp Lys Ala
      115            120            125

Leu Gln Cys Ser Leu His Gly Asp Thr Pro His Ala Ser Asn Leu Ser
      130            135            140

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Leu Ala Leu Lys Tyr Leu Pro Glu Val Phe Ala Pro Asn Ala Pro Asp
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 Val Leu Ser Cys Leu Glu Leu Arg Tyr Lys Val Asp Trp Pro Leu Asn
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 Ile Val Ile Thr Glu Gly Cys Leu Ser Lys Tyr Ser Gly Val Phe Ser
 180 185 190
 Phe Leu Leu Gln Leu Lys Leu Met Met Trp Ala Leu Lys Asp Val Cys
 195 200 205
 Phe His Leu Lys Arg Thr Ala Leu Leu Ser His Met Ala Gly Ser Val
 210 215 220
 Gln Phe Arg Gln Leu Gln Leu Phe Lys His Glu Met Gln His Phe Val
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 Lys Val Ile Gln Gly Tyr Ile Ala Asn Gln Ile Leu His Val Thr Trp
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 Cys Glu Phe Arg Ala Arg Leu Ala Thr Val Gly Asp Leu Glu Glu Ile
 260 265 270
 Gln Arg Ala His Ala Glu Tyr Leu His Lys Ala Val Phe Arg Gly Leu
 275 280 285
 Leu Thr Glu Lys Ala Ala Pro Val Met Asn Val Ile His Ser Ile Phe
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 Ser Leu Val Leu Lys Phe Arg Ser Gln Leu Ile Ser Gln Ala Trp Gly
 305 310 315 320
 Pro Pro Gly Gly Pro Arg Gly Ala Glu His Pro Asn Phe Ala Leu Met
 325 330 335
 Gln Gln Ser Tyr Asn Thr Phe Lys Tyr Tyr Ser His Phe Leu Phe Lys
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 <211> 1212
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1146)..(1147)

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<210> 86

<211> 167

<212> PRT

<213> Homo sapiens

<400> 86

Met Ala Ser Pro Arg Thr Val Thr Ile Val Ala Leu Ser Val Ala Leu
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Gly Leu Phe Phe Val Phe Met Gly Thr Ile Lys Leu Thr Pro Arg Leu
 20 25 30

Ser Lys Asp Ala Tyr Ser Glu Met Lys Arg Ala Tyr Lys Ser Tyr Val
 35 40 45

Arg Ala Leu Pro Leu Leu Lys Lys Met Gly Ile Asn Ser Ile Leu Leu
 50 55 60

Arg Lys Ser Ile Gly Ala Leu Glu Val Ala Cys Gly Ile Val Met Thr
 65 70 75 80

Leu Val Pro Gly Arg Pro Lys Asp Val Ala Asn Phe Phe Leu Leu Leu
 85 90 95

Leu Val Leu Ala Val Leu Phe Phe His Gln Leu Val Gly Asp Pro Leu
 100 105 110

Lys Arg Tyr Ala His Ala Leu Val Phe Gly Ile Leu Leu Thr Cys Arg
 115 120 125

Leu Leu Ile Ala Arg Lys Pro Glu Asp Arg Ser Ser Glu Lys Lys Pro
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Leu Pro Gly Asn Ala Glu Glu Gln Pro Ser Leu Tyr Glu Lys Ala Pro
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Gln Gly Lys Val Lys Val Ser
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<210> 87

<211> 1059

<212> DNA

<213> Homo sapiens

<400> 87

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<210> 88

<211> 192

<212> PRT

<213> Homo sapiens

<400> 88

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Tyr Leu Pro Gly His Phe Phe His Leu Leu Asn Val Gln His Pro Asp
      20             25             30

Leu Ile Cys His Asn Leu Phe Leu Thr Gly Asn Asn Glu Met Ile Asp
      35             40             45

Met Leu Pro His Cys Pro Leu Gln Ser Leu Ser Gly Ser Leu Val Leu
      50             55             60

Asp Cys Cys Ser Gly Lys Leu Tyr Arg Ala Leu Leu Ser Gln Ser Ser
      65             70             75             80

Leu Leu Gln Leu Leu Gln Asn Thr Cys Leu Asp Cys Glu Lys Met Ala
      85             90             95

Ala Leu His Cys Ala Leu Tyr Cys Gly Gln Gly Ala Gln Phe Leu Glu
      100            105            110

Ala Gln Ile Ile Gln Trp Ile Ser Glu Asn Val Ser Ala Cys His Ser
      115            120            125

Phe Asp Leu Ile Gln Glu Phe Ile Ile Ala Ser Ser Tyr Trp Ser Val
      130            135            140

Tyr Ser Glu Thr Ser Asn Met Asp Lys Leu Leu Pro His Ser Ser Val
      145            150            155            160

Leu Thr Trp Asn Thr Glu Ile Pro Gly Ile Thr Leu Val Thr Glu Asp

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165

170

175

Ile Ala Leu Pro Leu Met Lys Val Leu Lys Asn Val Leu Gly Ser Lys
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<210> 89

<211> 2529

<212> DNA

<213> Homo sapiens

<400> 89

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2529

<210> 90

<211> 244

<212> PRT

<213> Homo sapiens

<400> 90

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Phe Pro Leu Tyr Leu Leu Asn Phe Leu Gly Leu Trp Ser Trp Ile Cys
 20 25 30

Lys Lys Trp Phe Pro Tyr Phe Leu Val Arg Phe Thr Val Ile Tyr Asn
 35 40 45

Glu Gln Met Ala Ser Lys Lys Arg Glu Leu Phe Ser Asn Leu Gln Glu
 50 55 60

Phe Ala Gly Pro Ser Gly Lys Leu Ser Leu Leu Glu Val Gly Cys Gly
 65 70 75 80

Thr Gly Ala Asn Phe Lys Phe Tyr Pro Pro Gly Cys Arg Val Thr Cys
 85 90 95

Ile Asp Pro Asn Pro Asn Phe Glu Lys Phe Leu Ile Lys Ser Ile Ala
 100 105 110

Glu Asn Arg His Leu Gln Phe Glu Arg Phe Val Val Ala Ala Gly Glu
 115 120 125

Asn Met His Gln Val Ala Asp Gly Ser Val Asp Val Val Val Cys Thr
 130 135 140

Leu Val Leu Cys Ser Val Lys Asn Gln Glu Arg Ile Leu Arg Glu Val
 145 150 155 160

Cys Arg Val Leu Arg Pro Gly Gly Ala Phe Tyr Phe Met Glu His Val
 165 170 175

Ala Ala Glu Cys Ser Thr Trp Asn Tyr Phe Trp Gln Gln Val Leu Asp
 180 185 190

Pro Ala Trp His Leu Leu Phe Asp Gly Cys Asn Leu Thr Arg Glu Ser
 195 200 205

Trp Lys Ala Leu Glu Arg Ala Ser Phe Ser Lys Leu Lys Leu Gln His
 210 215 220

Ile Gln Ala Pro Leu Ser Trp Glu Leu Val Arg Pro His Ile Tyr Gly
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Tyr Ala Val Lys

<210> 91

<211> 2390

<212> DNA

<213> Homo sapiens

<400> 91

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<210> 92
 <211> 212
 <212> PRT
 <213> Homo sapiens

<400> 92
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 Thr Leu Val Val Ala Gly Met Val Gly Ser Ile Leu Cys Gly Leu Trp
 35 40 45
 Leu Asp Tyr Thr Lys Thr Tyr Lys Gln Thr Thr Leu Ile Val Tyr Ile
 50 55 60
 Leu Ser Phe Ile Gly Met Val Ile Phe Thr Phe Thr Leu Asp Leu Arg
 65 70 75 80
 Tyr Ile Ile Ile Val Phe Val Thr Gly Gly Val Leu Gly Phe Phe Met

85

90

95

Thr Gly Tyr Leu Pro Leu Gly Phe Glu Phe Ala Val Glu Ile Thr Tyr
100 105 110

Pro Glu Ser Glu Gly Thr Ser Ser Gly Leu Leu Asn Ala Ser Ala Gln
115 120 125

Ile Phe Gly Ile Leu Phe Thr Leu Ala Gln Gly Lys Leu Thr Ser Asp
130 135 140

Tyr Gly Pro Lys Ala Gly Asn Ile Phe Leu Cys Val Trp Met Phe Ile
145 150 155 160

Gly Ile Ile Leu Thr Ala Leu Ile Lys Ser Asp Leu Arg Arg His Asn
165 170 175

Ile Asn Ile Gly Ile Thr Asn Val Asp Val Lys Ala Ile Pro Ala Asp
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Ser Pro Thr Asp Gln Glu Pro Lys Thr Val Met Leu Ser Lys Gln Ser
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Glu Ser Ala Ile
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<210> 93

<211> 2922

<212> DNA

<213> Homo sapiens

<400> 93

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<210> 94

<211> 451

<212> PRT

<213> Homo sapiens

<400> 94

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Met Ala Thr Tyr Thr Cys Ile Thr Cys Arg Val Ala Phe Arg Asp Ala
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Asp Met Gln Arg Ala His Tyr Lys Thr Asp Trp His Arg Tyr Asn Leu
      20             25             30

```

```

Arg Arg Lys Val Ala Ser Met Ala Pro Val Thr Ala Glu Gly Phe Gln
      35             40             45

```

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Glu Arg Val Arg Ala Gln Arg Ala Val Ala Glu Glu Glu Ser Lys Gly
      50             55             60

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Ser Ala Thr Tyr Cys Thr Val Cys Ser Lys Lys Phe Ala Ser Phe Asn
      65             70             75             80

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Ala Tyr Glu Asn His Leu Lys Ser Arg Arg His Val Glu Leu Glu Lys
      85             90             95

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Lys Ala Val Gln Ala Val Asn Arg Lys Val Glu Met Met Asn Glu Lys
      100            105            110

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Asn Leu Glu Lys Gly Leu Gly Val Asp Ser Val Asp Lys Asp Ala Met
      115            120            125

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Asn Ala Ala Ile Gln Gln Ala Ile Lys Ala Gln Pro Ser Met Ser Pro
      130            135            140

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Lys Lys Ala Pro Pro Ala Pro Ala Lys Glu Ala Arg Asn Val Val Ala
      145            150            155            160

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Val Gly Thr Gly Gly Arg Gly Thr His Asp Arg Asp Pro Ser Glu Lys

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165 170 175
 Pro Pro Arg Leu Gln Trp Phe Glu Gln Gln Ala Lys Lys Leu Ala Lys
 180 185 190
 Gln Gln Glu Glu Asp Ser Glu Glu Glu Glu Glu Asp Leu Asp Gly Asp
 195 200 205
 Asp Trp Glu Asp Ile Asp Ser Asp Glu Glu Leu Glu Cys Glu Asp Thr
 210 215 220
 Glu Ala Met Asp Asp Val Val Glu Gln Asp Ala Glu Glu Glu Glu Ala
 225 230 235 240
 Glu Glu Gly Pro Pro Leu Gly Ala Ile Pro Ile Thr Asp Cys Leu Phe
 245 250 255
 Cys Ser His His Ser Ser Ser Leu Met Lys Asn Val Ala His Met Thr
 260 265 270
 Lys Asp His Ser Phe Phe Ile Pro Asp Ile Glu Tyr Leu Ser Asp Ile
 275 280 285
 Lys Gly Leu Ile Lys Tyr Leu Gly Glu Lys Val Gly Val Gly Lys Ile
 290 295 300
 Cys Leu Trp Cys Asn Glu Lys Gly Lys Ser Phe Tyr Ser Thr Glu Ala
 305 310 315 320
 Val Gln Ala His Met Asn Asp Lys Ser His Cys Lys Leu Phe Thr Asp
 325 330 335
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 Pro Ser Glu Lys Asn Leu Glu Tyr Asp Asp Glu Thr Met Glu Leu Ile
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 Lys Gln Arg Phe Gly Leu Ser Arg Ala Val Ala Val Ala Lys Asn Arg
 405 410 415
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<210> 95

<211> 1395

<212> DNA

<213> Homo sapiens

<400> 95

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<211> 137

<212> PRT

<213> Homo sapiens

<400> 96

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Val Phe Lys Leu Val Leu Ile Gly Leu Ile Ile Val Gly Lys Asp Pro
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Phe Ala Phe Phe Gly Met Gln Ala Pro Ser Ile Trp Gln Trp Gly Gln
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Glu Asn Lys Val Tyr Ala Cys Met Met Val Phe Phe Leu Ser Asn Met
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Ile Glu Asn Gln Cys Met Ser Thr Gly Ala Phe Glu Ile Thr Leu Asn
    85              90              95

Asp Val Pro Val Trp Ser Lys Leu Glu Ser Gly His Leu Pro Ser Met
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Gln Gln Leu Val Gln Ile Leu Asp Asn Glu Met Lys Leu Asn Val His
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<210> 98
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Tyr Ile Asn Glu Ser Thr Glu Ala Gln Ser Glu Gln Lys Glu Lys Ser
 50 55 60
 Leu Glu Phe Thr Lys Glu Leu Pro Gly Tyr Gly Tyr Thr Lys Lys Leu
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 85 90 95
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Glu Ala Leu Pro
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<210> 99
<211> 915
<212> DNA
<213> Homo sapiens

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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<210> 102

<211> 104

<212> PRT

<213> Homo sapiens

<400> 102

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Asp Lys Ser Gln Gln Val Ile Val Gln Gly Val His Glu Leu Tyr Asp
 35 40 45

Leu Glu Glu Thr Pro Val Ser Trp Lys Asp Asp Thr Glu Arg Thr Asn
 50 55 60

Arg Leu Val Leu Ile Gly Arg Asn Leu Asp Lys Asp Ile Leu Lys Gln
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Leu Phe Ile Ala Thr Val Thr Glu Thr Glu Lys Gln Trp Thr Thr His
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Phe Lys Glu Asp Gln Val Cys Thr
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<210> 103
 <211> 1530
 <212> DNA
 <213> Homo sapiens

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<210> 104
 <211> 215
 <212> PRT
 <213> Homo sapiens

<400> 104
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35 40 45
 Lys Thr Ser Pro Met Arg Met Leu Tyr Met Thr Ser Leu Met Ala Pro
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 Thr Arg His Ala Asn Glu Asp Ala Val Asp Asp Ile Ala Tyr Lys Asp
 65 70 75 80
 Thr Val Gln Asp Ile Ala Asn Glu Asp Ala Val Tyr Asp Ile Ala Asn
 85 90 95
 Glu Asp Val Val Tyr Asp Ile Ala Asn Glu Asp Ala Leu Gln Asp Ile
 100 105 110
 Ala Asn Glu Val Ala Val Tyr Asp Ile Ala Asn Glu Asp Ile Val Tyr
 115 120 125
 Asp Ile Ala Asn Glu Asp Ala Leu Tyr Asp Ile Thr Asn Glu Asp Ala
 130 135 140
 Val Tyr Asn Ile Ala Asn Glu Asp Ala Val Tyr Gly Ile Ala Asn Glu
 145 150 155 160
 Asp Ala Val Tyr Glu Phe Ala Asn Lys Asp Ala Val Tyr Asp Ile Ala
 165 170 175
 Asn Glu Asp Thr Val Gln Asp Ile Cys Lys Lys Glu Asp Ala Ala Asn
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 Glu Pro Leu Thr Leu Glu Asn Asp Thr Tyr Pro Glu Ile Thr His Phe
 195 200 205
 Leu Arg Lys Lys Arg His Leu
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<210> 105

<211> 2423

<212> DNA

<213> Homo sapiens

<400> 105

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<210> 106

<211> 66

<212> PRT

<213> Homo sapiens

<400> 106

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Cys Pro Cys Glu Tyr Leu Arg Lys Val Ser Glu Cys Arg Gln Met Gly
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Pro Gly Ala Leu Glu Gln Phe Pro Gly Leu Ser Cys His Thr Ser His
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Ser Arg

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<210> 107

<211> 1418

<212> DNA

<213> Homo sapiens

<400> 107

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<210> 108

<211> 123

<212> PRT

<213> Homo sapiens

<400> 108

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 1 5 10 15
 Leu Ser Arg Ala His Thr Lys Ile Gln Pro Ser Asn Lys His Asp Gly
 20 25 30
 Ala Val Pro Leu Pro Ala Ser Pro Val Pro Leu Ser Pro Pro Gly Leu
 35 40 45
 Gly Ser Ser Gly Val Gly Val Gly Arg Gly Pro Cys Pro Pro Cys Leu
 50 55 60
 Asp Phe Ala Pro Leu Gly Pro Ala Gly Ser Arg Pro Val Asn Val Ser
 65 70 75 80
 Ser Ser Gly Thr Asp Ser Val Cys Ser Trp Pro Trp Val His Leu Thr
 85 90 95
 Asn Ile Cys Pro Gly Pro Pro Arg Pro Ser Pro Met Pro Pro Gly Pro
 100 105 110
 Arg His Leu Phe Glu Val Leu Pro Met Cys Ser
 115 120

<210> 109

<211> 1199

<212> DNA

<213> Homo sapiens

<400> 109

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<210> 110

<211> 283

<212> PRT

<213> Homo sapiens

<400> 110

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 20 25 30
 Ala Ser Pro Thr Pro His Ala Ala Phe Leu Ala Asp Pro Val Ser Asn
 35 40 45
 Met Ala Met Ala Tyr Gly Ser Ser Leu Ala Ala Gln Gly Lys Glu Leu
 50 55 60
 Val Asp Lys Asn Ile Asp Arg Phe Ile Pro Ile Thr Lys Leu Lys Tyr
 65 70 75 80
 Tyr Phe Ala Val Asp Thr Met Tyr Val Gly Arg Lys Leu Gly Leu Leu
 85 90 95
 Phe Phe Pro Tyr Leu His Gln Asp Trp Glu Val Gln Tyr Gln Gln Asp
 100 105 110
 Thr Pro Val Ala Pro Arg Phe Asp Val Asn Ala Pro Asp Leu Tyr Ile
 115 120 125
 Pro Ala Met Ala Phe Ile Thr Tyr Val Leu Val Ala Gly Leu Ala Leu
 130 135 140
 Gly Thr Gln Asp Arg Phe Ser Pro Asp Leu Leu Gly Leu Gln Ala Ser
 145 150 155 160
 Ser Ala Leu Ala Trp Leu Thr Leu Glu Val Leu Ala Ile Leu Leu Ser
 165 170 175
 Leu Tyr Leu Val Thr Val Asn Thr Asp Leu Thr Thr Ile Asp Leu Val
 180 185 190
 Ala Phe Leu Gly Tyr Lys Tyr Val Gly Met Ile Gly Gly Val Leu Met
 195 200 205

Gly Leu Leu Phe Gly Lys Ile Gly Tyr Tyr Leu Val Leu Gly Trp Cys
 210 215 220

Cys Val Ala Ile Phe Val Phe Met Ile Arg Thr Leu Arg Leu Lys Ile
 225 230 235 240

Leu Ala Asp Ala Ala Ala Glu Gly Val Pro Val Arg Gly Ala Arg Asn
 245 250 255

Gln Leu Arg Met Tyr Leu Thr Met Ala Val Ala Ala Ala Gln Pro Met
 260 265 270

Leu Met Tyr Trp Leu Thr Phe His Leu Val Arg
 275 280

<210> 111

<211> 2024

<212> DNA

<213> Homo sapiens

<400> 111

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 ttgaggaaca tatggagcaa caaaaagaaa atattggagca tcttaaaagt ctgaaaatag 660
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 cacctgatta aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 2024

<210> 112

<211> 487

<212> PRT

<213> Homo sapiens

<400> 112

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 Phe Thr Ala Asp Gly Asp Gln Val Phe Ala Gly Arg Tyr Tyr Ser Ser
 35 40 45
 Glu Asn Thr Arg Pro Lys Phe Leu Ser Arg Asp Val Asp Ser Glu Ile
 50 55 60
 Ser Asp Leu Glu Asn Glu Val Glu Asn Lys Thr Ala Gln Ile Leu Asn
 65 70 75 80
 Leu Gln Gln His Leu Ser Ala Leu Glu Lys Asp Ile Lys His Asn Glu
 85 90 95
 Glu Leu Leu Lys Arg Cys Gln Leu His Tyr Lys Glu Leu Lys Met Lys
 100 105 110
 Ile Arg Lys Asn Ile Ser Glu Ile Arg Glu Leu Glu Asn Ile Glu Glu
 115 120 125
 His Gln Ser Val Asp Ile Ala Thr Leu Glu Asp Glu Ala Gln Glu Asn
 130 135 140
 Lys Ser Lys Met Lys Met Val Glu Glu His Met Glu Gln Gln Lys Glu
 145 150 155 160
 Asn Met Glu His Leu Lys Ser Leu Lys Ile Glu Ala Glu Asn Lys Tyr
 165 170 175
 Asp Ala Ile Lys Phe Lys Ile Asn Gln Leu Ser Glu Leu Ala Asp Pro
 180 185 190
 Leu Lys Asp Glu Leu Asn Leu Ala Asp Ser Glu Val Asp Asn Gln Lys
 195 200 205
 Arg Gly Lys Arg His Tyr Glu Glu Lys Gln Lys Glu His Leu Asp Thr
 210 215 220
 Leu Asn Lys Lys Lys Arg Glu Leu Asp Met Lys Glu Lys Glu Leu Glu
 225 230 235 240
 Glu Lys Met Ser Gln Ala Arg Gln Ile Cys Pro Glu Arg Ile Glu Val
 245 250 255
 Glu Lys Ser Ala Ser Ile Leu Asp Lys Glu Ile Asn Arg Leu Arg Gln
 260 265 270
 Lys Ile Gln Ala Glu His Ala Ser His Gly Asp Arg Glu Glu Ile Met
 275 280 285
 Arg Gln Tyr Gln Glu Ala Arg Glu Thr Tyr Leu Asp Leu Asp Ser Lys
 290 295 300

Val Arg Thr Leu Lys Lys Phe Ile Lys Leu Leu Gly Glu Ile Met Glu
 305 310 315 320
 His Arg Phe Lys Thr Tyr Gln Gln Phe Arg Arg Cys Leu Thr Leu Arg
 325 330 335
 Cys Lys Leu Tyr Phe Asp Asn Leu Leu Ser Gln Arg Ala Tyr Cys Gly
 340 345 350
 Lys Met Asn Phe Asp His Lys Asn Glu Thr Leu Ser Ile Ser Val Gln
 355 360 365
 Pro Gly Glu Gly Asn Lys Ala Ala Phe Asn Asp Met Arg Ala Leu Ser
 370 375 380
 Gly Gly Glu Arg Ser Phe Ser Thr Val Cys Phe Ile Leu Ser Leu Trp
 385 390 395 400
 Ser Ile Ala Glu Ser Pro Phe Arg Cys Leu Asp Glu Phe Asp Val Tyr
 405 410 415
 Met Asp Met Val Asn Arg Arg Ile Ala Met Asp Leu Ile Leu Lys Met
 420 425 430
 Ala Asp Ser Gln Arg Phe Arg Gln Phe Ile Leu Leu Thr Pro Gln Ser
 435 440 445
 Met Ser Ser Leu Pro Ser Ser Lys Leu Ile Arg Ile Leu Arg Met Ser
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 465 470 475 480
 Glu Glu Asp Asp Asp Gln Arg
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<210> 113

<211> 1424

<212> DNA

<213> Homo sapiens

<400> 113

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<210> 114

<211> 207

<212> PRT

<213> Homo sapiens

<400> 114

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 Gln Leu Val Ala Ala Leu Glu Arg Gln Ile Phe Asp Phe Leu Gly Tyr
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 Gln Trp Ala Pro Ile Leu Ala Asn Phe Leu His Ile Met Ala Val Ile
 35 40 45
 Leu Gly Ile Phe Gly Thr Val Gln Tyr Arg Ser Arg Tyr Leu Ile Leu
 50 55 60
 Tyr Ala Ala Trp Leu Val Leu Trp Val Gly Trp Asn Ala Phe Ile Ile
 65 70 75 80
 Cys Phe Tyr Leu Glu Val Gly Gln Leu Ser Gln Asp Arg Asp Phe Ile
 85 90 95
 Met Thr Phe Asn Thr Ser Leu His Arg Ser Trp Trp Met Glu Asn Gly
 100 105 110
 Pro Gly Cys Leu Val Thr Pro Val Leu Asn Ser Arg Leu Ala Leu Glu
 115 120 125
 Asp His His Val Ile Ser Val Thr Gly Cys Leu Leu Asp Tyr Pro Tyr
 130 135 140
 Ile Glu Ala Leu Ser Ser Ala Leu Gln Ile Phe Leu Ala Leu Phe Gly
 145 150 155 160
 Phe Val Phe Ala Cys Tyr Val Ser Lys Val Phe Leu Glu Glu Glu Asp
 165 170 175
 Ser Phe Asp Phe Ile Gly Gly Phe Asp Ser Tyr Gly Tyr Gln Ala Pro
 180 185 190
 Gln Lys Thr Ser His Leu Gln Leu Gln Pro Leu Tyr Thr Ser Gly
 195 200 205

<210> 115

<211> 843

<212> DNA

<213> Homo sapiens

<400> 115

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<210> 116

<211> 84

<212> PRT

<213> Homo sapiens

<400> 116

Met Gly Thr Arg Arg Pro Leu Gly Arg Leu Leu Gln Ala Gly Thr Arg
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 Pro Ala Arg Pro Thr Pro His Gly Arg Arg Arg Leu His Val Ser Ala
 20 25 30
 Pro Leu Gln Ala Gln Glu Ala Arg Gly Val Thr Trp Arg Pro Gly Pro
 35 40 45
 Ala Ser Pro Ala Pro Leu Arg Leu Thr Thr Tyr Pro Pro Pro Phe Phe
 50 55 60
 Leu Ser Lys Tyr Pro Asp Gln Ser Ile Ser Pro Arg Arg Thr Arg Thr
 65 70 75 80
 Ala Gly Ser Asp

<210> 117

<211> 2232

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (225)

<400> 117

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 aaaaaaaaaa aa 2232

<210> 118

<211> 133

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (8)

<400> 118

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 20 25 30

Gly Gln Val Thr Val Trp Glu Ala Glu Ala Pro Leu Gln Gly Gly Phe
 35 40 45

Gly Ala Pro Gln Ser Thr Pro Gly Ala Lys Gly Ala Trp Ala Trp Glu
 50 55 60

Ala Arg Thr Gly Lys Val Leu Gly Leu Ser Pro Ser Pro Arg Thr Pro
 65 70 75 80

Pro Gln Ser Leu Gly Leu Ser Asn Ser His Asp Arg Ala Leu Val Lys
 85 90 95

Arg Lys Leu Lys Glu Met Ala Ala Ala Glu Lys Glu Arg Lys Ala
 100 105 110

Gln Glu Lys Ala Ala Arg Gln Arg Glu Lys Leu Arg Arg Arg Glu Gln
 115 120 125

Glu Ala Lys Lys Ser
 130

<210> 119

<211> 4086

<212> DNA

<213> Homo sapiens

<400> 119

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<210> 120

<211> 102

<212> PRT

<213> Homo sapiens

<400> 120

Met Ser Thr Gly Asn Thr Val Cys Ser Arg Tyr His Phe Tyr Val Arg
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Val Asn Gln Ala Val Ile Trp Val Asp Val Leu Ile Tyr Trp Ser Val
 20 25 30

His Ile Leu Asp Ile Val Ile Pro His Trp Leu Val Asn Ser Val Ser
 35 40 45

Ile Tyr Trp Ile Ile Glu Trp Arg Leu Trp Cys Trp Trp Trp Glu Arg
 50 55 60

Trp Trp Tyr Trp Arg Ile His Pro Ala Val Val Ala Ala Val Phe Arg
 65 70 75 80

Ile Lys Asp Asp Arg Ser Ser Ala Pro Cys Asp Ile Gly Ile Met Cys
 85 90 95

Ala Gln Pro Ala Asn Pro
 100

<210> 121

<211> 1293

<212> DNA

<213> Homo sapiens

<400> 121

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 tcagcccaca aaataggctg gacactcaaa aaacgttgcg tttatctacc ttttagagag 120

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aaatgacgtc cagcacatcc aggggcaggc tcaagggaga acagccccc aagctaagat 300
cctgccaaagc taaatacagt agttctaata aaatgtgaga ggctataatc ccatttggga 360
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aaagcctata actaagaaaa aaaaaaaaaa aaa 1293

```

<210> 122

<211> 54

<212> PRT

<213> Homo sapiens

<400> 122

```

Met Val Arg Asn Ser Gln Gln Gly Ser Gly Gly Asn Gly Leu Thr His
  1                      5                      10                      15

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Leu Arg Leu Met Pro Gly Leu Leu Pro Ile Trp Val Ala Ser Ala Asn
      20                      25                      30

```

```

Asp Val Gln His Ile Gln Gly Gln Ala Gln Gly Arg Thr Ala Pro Lys
      35                      40                      45

```

```

Ala Lys Ile Leu Pro Ser
      50

```

<210> 123

<211> 2509

<212> DNA

<213> Homo sapiens

<400> 123

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gaggctcttg tatagcagtt tttgtctatt ttaacattgt agtcatttgt actttgatat 480
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tattgagaac tacttaacaa aagatttatc tgtaagcttg aactcaggag tacagtttta 780
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<210> 124

<211> 89

<212> PRT

<213> Homo sapiens

<400> 124

```

Met Ala Gly Met Ala Leu Ala Arg Ala Trp Lys Gln Met Ser Trp Phe
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```

```

Tyr Tyr Gln Tyr Leu Leu Val Thr Ala Leu Tyr Met Leu Glu Pro Trp
      20             25             30

```

```

Glu Arg Thr Val Phe Ser Trp Phe Pro Leu Trp Gly Trp His Tyr Thr
      35             40             45

```

```

Gln Asp Thr Ser Ser Cys Pro Ser Thr Ser Trp Arg Tyr Cys Thr Thr
      50             55             60

```

```

Leu Lys Ser Tyr Asn Asp Gln Asp Ala Thr Arg Ile Arg Gly Ser Leu
      65             70             75             80

```

```

Gly Lys Thr His Pro Thr Lys Leu Glu
      85

```

<210> 125

<211> 2672

<212> DNA

<213> Homo sapiens

<400> 125

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<210> 126

<211> 750

<212> PRT

<213> Homo sapiens

<400> 126

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Met Glu Asp Leu Phe Glu Thr Phe Gln Asp Glu Met Gly Phe Ser Asn
  1                      5                      10                      15

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```

Met Glu Asp Asp Gly Pro Glu Glu Glu Arg Val Ala Glu Pro Gln
      20                      25                      30

```

```

Ala Asn Phe Asn Thr Pro Gln Ala Leu Arg Phe Glu Glu Leu Leu Ala
      35                      40                      45

```

Asn Leu Leu Asn Glu Gln His Gln Ile Ala Lys Glu Leu Phe Glu Gln
 50 55 60
 Leu Lys Met Lys Lys Pro Ser Ala Lys Gln Gln Lys Glu Val Glu Lys
 65 70 75 80
 Val Lys Pro Gln Cys Lys Glu Val His Gln Thr Leu Ile Leu Asp Pro
 85 90 95
 Ala Gln Arg Lys Arg Leu Gln Gln Gln Met Gln Gln His Val Gln Leu
 100 105 110
 Leu Thr Gln Ile His Leu Leu Ala Thr Cys Asn Pro Asn Leu Asn Pro
 115 120 125
 Glu Ala Ser Ser Thr Arg Ile Cys Leu Lys Glu Leu Gly Thr Phe Ala
 130 135 140
 Gln Ser Ser Ile Ala Leu His His Gln Tyr Asn Pro Lys Phe Gln Thr
 145 150 155 160
 Leu Phe Gln Pro Cys Asn Leu Met Gly Ala Met Gln Leu Ile Glu Asp
 165 170 175
 Phe Ser Thr His Val Ser Ile Asp Cys Ser Pro His Lys Thr Val Lys
 180 185 190
 Lys Thr Ala Asn Glu Phe Pro Cys Leu Pro Lys Gln Val Ala Trp Ile
 195 200 205
 Leu Ala Thr Ser Lys Val Phe Met Tyr Pro Glu Leu Leu Pro Val Cys
 210 215 220
 Ser Leu Lys Ala Lys Asn Pro Gln Asp Lys Ile Leu Phe Thr Lys Ala
 225 230 235 240
 Glu Asp Asn Leu Leu Ala Leu Gly Leu Lys His Phe Glu Gly Thr Glu
 245 250 255
 Phe Leu Asn Pro Leu Ile Ser Lys Tyr Leu Leu Thr Cys Lys Thr Ala
 260 265 270
 Arg Gln Leu Thr Val Arg Ile Lys Asn Leu Asn Met Asn Arg Ala Pro
 275 280 285
 Asp Asn Ile Ile Lys Phe Tyr Lys Lys Thr Lys Gln Leu Pro Val Leu
 290 295 300
 Gly Lys Cys Cys Glu Glu Ile Gln Pro His Gln Trp Lys Pro Pro Ile
 305 310 315 320
 Glu Arg Glu Glu His Arg Leu Pro Phe Trp Leu Lys Ala Ser Leu Pro
 325 330 335
 Ser Ile Gln Glu Glu Leu Arg His Met Ala Asp Gly Ala Arg Glu Val
 340 345 350
 Gly Asn Met Thr Gly Thr Thr Glu Ile Asn Ser Asp Gln Gly Leu Glu
 355 360 365

Lys Asp Asn Ser Glu Leu Gly Ser Glu Thr Arg Tyr Pro Leu Leu Leu
 370 375 380
 Pro Lys Gly Val Val Leu Lys Leu Lys Pro Val Ala Asp Arg Phe Pro
 385 390 395 400
 Lys Lys Ala Trp Arg Gln Lys Arg Ser Ser Val Leu Lys Pro Leu Leu
 405 410 415
 Ile Gln Pro Ser Pro Ser Leu Gln Pro Ser Phe Asn Pro Gly Lys Thr
 420 425 430
 Pro Ala Gln Ser Thr His Ser Glu Ala Pro Pro Ser Lys Met Val Leu
 435 440 445
 Arg Ile Pro His Pro Ile Gln Pro Ala Thr Val Leu Gln Thr Val Pro
 450 455 460
 Gly Val Pro Pro Leu Gly Val Ser Gly Gly Glu Ser Phe Glu Ser Pro
 465 470 475 480
 Ala Ala Leu Pro Ala Met Pro Pro Glu Ala Arg Thr Ser Phe Pro Leu
 485 490 495
 Ser Glu Ser Gln Thr Leu Leu Ser Ser Ala Pro Val Pro Lys Val Met
 500 505 510
 Met Pro Ser Pro Ala Ser Ser Met Phe Arg Lys Pro Tyr Val Arg Arg
 515 520 525
 Arg Pro Ser Lys Arg Arg Gly Ala Arg Ala Phe Arg Cys Ile Lys Pro
 530 535 540
 Ala Pro Val Ile His Pro Ala Ser Val Ile Phe Thr Val Pro Ala Thr
 545 550 555 560
 Thr Val Lys Ile Val Ser Leu Gly Gly Gly Cys Asn Met Ile Gln Pro
 565 570 575
 Val Asn Ala Ala Val Ala Gln Ser Pro Gln Thr Ile Pro Ile Ala Thr
 580 585 590
 Leu Leu Val Asn Pro Thr Ser Phe Pro Cys Pro Leu Asn Gln Pro Leu
 595 600 605
 Val Ala Ser Ser Val Ser Pro Leu Ile Val Ser Gly Asn Ser Val Asn
 610 615 620
 Leu Pro Ile Pro Ser Thr Pro Glu Asp Lys Ala His Met Asn Val Asp
 625 630 635 640
 Ile Ala Cys Ala Val Ala Asp Gly Glu Asn Ala Phe Gln Gly Leu Glu
 645 650 655
 Pro Lys Leu Glu Pro Gln Glu Leu Ser Pro Leu Ser Ala Thr Val Phe
 660 665 670
 Pro Lys Val Glu His Ser Pro Gly Pro Pro Pro Val Asp Lys Gln Cys
 675 680 685

Gln Glu Gly Leu Ser Glu Asn Ser Ala Tyr Arg Trp Thr Val Val Lys
690 695 700

Thr Glu Glu Gly Arg Gln Ala Leu Glu Pro Leu Pro Gln Gly Ile Gln
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Glu Ser Leu Asn Asn Ser Ser Pro Gly Asp Leu Glu Glu Val Val Lys
725 730 735

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<211> 2673

<212> DNA

<213> Homo sapiens

<400> 127

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<210> 128

<211> 633

<212> PRT

<213> Homo sapiens

<400> 128

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 Ile Phe Gln Thr Gly Leu Val Ala Tyr Val Asp Leu Asp Glu Arg Ala
 50 55 60
 Ile Asp Ala Leu Arg Glu Phe Asn Glu Glu Gly Ala Leu Ser Val Leu
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 Phe Leu Cys Gly Gly Val Met Lys Thr Tyr Arg Gln Arg Glu Lys Gln Gly
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 Ser Lys Val Gln Glu Ser Thr Lys Gly Pro Asp Glu Ala Lys Ile Lys
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 Ala Leu Leu Glu Arg Thr Gly Tyr Thr Leu Asp Val Thr Thr Gly Gln
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 Arg Lys Tyr Gly Gly Pro Pro Pro Asp Ser Val Tyr Ser Gly Val Gln
 145 150 155 160
 Pro Gly Ile Gly Thr Glu Val Phe Val Gly Lys Ile Pro Arg Asp Leu
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 Tyr Glu Asp Glu Leu Val Pro Leu Phe Glu Lys Ala Gly Pro Ile Trp
 180 185 190
 Asp Leu Arg Leu Met Met Asp Pro Leu Ser Gly Gln Asn Arg Gly Tyr
 195 200 205
 Ala Phe Ile Thr Phe Cys Gly Lys Glu Ala Ala Gln Glu Ala Val Lys
 210 215 220
 Leu Cys Asp Ser Tyr Glu Ile Arg Pro Gly Lys His Leu Gly Val Cys
 225 230 235 240
 Ile Ser Val Ala Asn Asn Arg Leu Phe Val Gly Ser Ile Pro Lys Asn
 245 250 255

Lys Thr Lys Glu Asn Ile Leu Glu Glu Phe Ser Lys Val Thr Glu Gly
 260 265 270
 Leu Val Asp Val Ile Leu Tyr His Gln Pro Asp Asp Lys Lys Lys Asn
 275 280 285
 Arg Gly Phe Cys Phe Leu Glu Tyr Glu Asp His Lys Ser Ala Ala Gln
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 Ala Arg Arg Arg Leu Met Ser Gly Lys Val Lys Val Trp Gly Asn Val
 305 310 315 320
 Val Thr Val Glu Trp Ala Asp Pro Val Glu Glu Pro Asp Pro Glu Val
 325 330 335
 Met Ala Lys Val Lys Val Leu Phe Val Arg Asn Leu Ala Thr Thr Val
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 Thr Glu Glu Ile Leu Glu Lys Ser Phe Ser Glu Phe Gly Lys Leu Glu
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 Arg Val Lys Lys Leu Lys Asp Tyr Ala Phe Val His Phe Glu Asp Arg
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 Pro Pro Pro Arg Gly Arg Gly Ala Pro Pro Pro Arg Gly Arg Ala Gly
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 Tyr Ser Gln Arg Gly Ala Pro Leu Gly Pro Pro Arg Gly Ser Arg Gly
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 Ser Arg Gly Asn Arg Gly Gly Asn Val Gly Gly Lys Arg Lys Ala Asp
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Gly Tyr Asn Gln Pro Asp Ser Lys Arg Arg Gln Thr Asn Asn Gln Gln
580 585 590

Asn Trp Gly Ser Gln Pro Ile Ala Gln Gln Pro Leu Gln Gln Gly Gly
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Asp Tyr Ser Gly Asn Tyr Gly Tyr Asn Asn Asp Asn Gln Glu Phe Tyr
610 615 620

Gln Asp Thr Tyr Gly Gln Gln Trp Lys
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<210> 129

<211> 938

<212> DNA

<213> Homo sapiens

<400> 129

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<210> 130

<211> 244

<212> PRT

<213> Homo sapiens

<400> 130

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Pro Glu Leu Tyr Ile Arg Glu Ser Val Lys Gly Ser Leu Asp Arg Lys
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Lys Leu Glu Gln Leu Tyr Asn Arg Tyr Gln Asp Pro Gln Asp Glu Asn
50 55 60

Lys Ile Gly Ile Asp Gly Ile Gln Gln Phe Cys Asp Asp Leu Ala Leu
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Asp Pro Ala Ser Ile Ser Val Leu Ile Ile Ala Trp Lys Phe Arg Ala
85 90 95

Ala Thr Gln Cys Glu Phe Ser Lys Gln Glu Phe Met Asp Gly Met Thr
 100 105 110

Glu Leu Gly Cys Asp Ser Ile Glu Lys Leu Lys Ala Gln Ile Pro Lys
 115 120 125

Met Glu Gln Glu Leu Lys Glu Pro Gly Arg Phe Lys Asp Phe Tyr Gln
 130 135 140

Phe Thr Phe Asn Phe Ala Lys Asn Pro Gly Gln Lys Gly Leu Asp Leu
 145 150 155 160

Glu Met Ala Ile Ala Tyr Trp Asn Leu Val Leu Asn Gly Arg Phe Lys
 165 170 175

Phe Leu Asp Leu Trp Asn Lys Phe Leu Leu Glu His His Lys Arg Ser
 180 185 190

Ile Pro Lys Asp Thr Trp Asn Leu Leu Leu Asp Phe Ser Thr Met Ile
 195 200 205

Ala Asp Asp Met Ser Asn Tyr Asp Glu Glu Gly Ala Trp Pro Val Phe
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<210> 131

<211> 5170

<212> DNA

<213> Homo sapiens

<400> 131

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<211> 695

<212> PRT

<213> Homo sapiens

<400> 132

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 Ser Leu Gln Arg Phe Thr Ala Pro Thr Ser Gln Phe Tyr His Leu Phe
 50 55 60
 Leu His Gly Asn Ser Leu Thr Arg Leu Phe Pro Asn Glu Phe Ala Asn
 65 70 75 80
 Phe Tyr Asn Ala Val Ser Leu His Met Glu Asn Asn Gly Leu His Glu
 85 90 95
 Ile Val Pro Gly Ala Phe Leu Gly Leu Gln Leu Val Lys Arg Leu His
 100 105 110
 Ile Asn Asn Asn Lys Ile Lys Ser Phe Arg Lys Gln Thr Phe Leu Gly
 115 120 125
 Leu Asp Asp Leu Glu Tyr Leu Gln Ala Asp Phe Asn Leu Leu Arg Asp
 130 135 140
 Ile Asp Pro Gly Ala Phe Gln Asp Leu Asn Lys Leu Glu Val Leu Ile
 145 150 155 160
 Leu Asn Asp Asn Leu Ile Ser Thr Leu Pro Ala Asn Val Phe Gln Tyr
 165 170 175
 Val Pro Ile Thr His Leu Asp Leu Arg Gly Asn Arg Leu Lys Arg Cys
 180 185 190
 Pro Met Arg Ser Leu Gly Ala Asn Pro Trp Tyr Cys Gly Asp Pro Ala
 195 200 205
 Arg Asp Asn Pro Trp Asp Cys Thr Cys Asp Leu Leu Ser Leu Lys Glu
 210 215 220
 Trp Leu Glu Asn Ile Pro Lys Asn Ala Leu Ile Gly Arg Val Val Cys
 225 230 235 240
 Glu Ala Pro Thr Arg Leu Gln Gly Lys Asp Leu Asn Glu Thr Thr Glu
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 Gln Asp Leu Cys Pro Leu Lys Asn Arg Val Asp Ser Ser Leu Pro Ala

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Thr Ala Ala Ile Ala Thr Gly Ser Ser Arg Asn Lys Pro Leu Ala Asn 325 330 335		
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Gly Leu Lys Met Asn Cys Asn Asn Arg Asn Val Ser Ser Leu Ala Asp 355 360 365		
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Lys Ile His Ser Ile Arg Lys Ser His Phe Val Asp Tyr Lys Asn Leu 385 390 395 400		
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Val Leu Asp Gln Leu Thr Ser Ile Ile Gln Ile Asp Leu His Gly Asn 515 520 525		
Pro Trp Glu Cys Ser Cys Thr Ile Val Pro Phe Lys Gln Trp Ala Glu 530 535 540		
Arg Leu Gly Ser Glu Val Leu Met Ser Asp Leu Lys Cys Glu Thr Pro 545 550 555 560		
Val Asn Phe Phe Arg Lys Asp Phe Met Leu Leu Ser Asn Asp Glu Ile 565 570 575		
Cys Pro Gln Leu Tyr Ala Arg Ile Ser Pro Thr Leu Thr Ser His Ser		

580

585

590

Lys Asn Ser Thr Gly Leu Ala Glu Thr Gly Thr His Ser Asn Ser Tyr
595 600 605

Leu Asp Thr Ser Arg Val Ser Ile Ser Val Leu Val Pro Gly Leu Leu
610 615 620

Leu Val Phe Val Thr Ser Ala Phe Thr Val Val Gly Met Leu Val Phe
625 630 635 640

Ile Leu Arg Asn Arg Lys Arg Ser Lys Arg Arg Asp Ala Asn Ser Ser
645 650 655

Ala Ser Glu Ile Asn Ser Leu Gln Thr Val Cys Asp Ser Ser Tyr Trp
660 665 670

His Asn Gly Pro Tyr Asn Ala Asp Gly Ala His Arg Val Tyr Asp Cys
675 680 685

Gly Ser His Ser Leu Ser Asp
690 695

<210> 133

<211> 1564

<212> DNA

<213> Homo sapiens

<400> 133

attctagacc tcggcctccc aaagtgctgt gattataggt gtaagccacc gtgtctggcc 60
tctgaacaac tttttcagca actaaaaaag ccacaggagt tgaactgcta ggattctgac 120
tatgctgtgg tggctagtgc tcctactcct acctacatta aaatctgttt tttgttctct 180
tgtaactagc ctttaccttc ctaacacaga ggatctgtca ctgtggctct ggcccaaacc 240
tgaccttcac tctggaacga gaacagaggt ttctaccac accgtccct cgaagccggg 300
gacagcctca ccttgctggc ctctcgctgg agcagtggcc tcaccaactg tctcacgtct 360
ggaggcactg actcgggagc tgcaggtagc tgagcctctt ggtagctgag gctttcaagg 420
tgggccttgc cctggccgta gaagggttg acaagcccga agatttcata ggcatgggt 480
cccactgccc aggcacagc cttgctgtag tcaatcactg cctggggcc aggcaggcc 540
gtggacacct gctcagaagc agtgggtgag acatcacgct gcccgcccat ctaacctttt 600
catgtcctgc acatcacctg atccatgggc taatctgaac tctgtcccaa ggaaccaga 660
gcttgagtga gctgtggctc agaccagaa ggggtctgct tagaccacct ggtttatgtg 720
acaggacttg cattctctc gaacatgagg gaacgccga ggaagcaaa gtggcaggga 780
aggaacttgt gccaaattat gggtcagaaa agatggaggt gttgggttat cacaaggcat 840
cgagtctcct gcattcagtg gacatgtggg ggaagggtc ccatggcgc atgacacact 900
cgggactcac ctctggggcc atcagacagc cggttccgcc ccatccacg taccagctgc 960
tgaagggcaa ctgcaggccg atgctctcat cagccaggca gcagccaaaa tctgcgatca 1020
ccagccaggg gcagccgtct gggaaggagc aagcaaatg accatttctc ctcccctcct 1080
tccctctgag aggcctcct atgtccctac taaagccacc agcaagacat agctgacagg 1140
ggctaattgg tcagtgttgg cccaggaggt cagcaaggcc tgagagctga tcagaagggc 1200
ctgctgtgag aacacggaaa tgcctccagt aagtacaggc tgcaaatcc ccaggcaaa 1260
gactgtgtgg ctcaatttaa atcatgttct agtaattgga gctgtcccca agaccaaagg 1320
agctagagct tggttcaaat gatctccaag ggcccttata cccaggaga ctttgatttg 1380
aatttgaaac cccaaatcca aacctaagaa ccaggtgcat taagaatcag ttattgccgg 1440
gtgtgtggc ctgtaatgcc aacattttg gaggccgagg cgggtagatc acctgaggtc 1500
aggagtcca gaccagcctg gccaacatgg tgaaccctt gtctctacta aaaaaaaaaa 1560
aaaa 1564

<210> 134

<211> 109

<212> PRT

<213> Homo sapiens

<400> 134

Met Leu Trp Trp Leu Val Leu Leu Leu Leu Pro Thr Leu Lys Ser Val
 1 5 10 15

Phe Cys Ser Leu Val Thr Ser Leu Tyr Leu Pro Asn Thr Glu Asp Leu
 20 25 30

Ser Leu Trp Leu Trp Pro Lys Pro Asp Leu His Ser Gly Thr Arg Thr
 35 40 45

Glu Val Ser Thr His Thr Val Pro Ser Lys Pro Gly Thr Ala Ser Pro
 50 55 60

Cys Trp Pro Leu Ala Gly Ala Val Pro Ser Pro Thr Val Ser Arg Leu
 65 70 75 80

Glu Ala Leu Thr Arg Ala Val Gln Val Ala Glu Pro Leu Gly Ser Cys
 85 90 95

Gly Phe Gln Gly Gly Pro Cys Pro Gly Arg Arg Arg Asp
 100 105

<210> 135

<211> 839

<212> DNA

<213> Homo sapiens

<400> 135

aacgcgtttt gccagttatg cgaaaacatg gctgcccgcg gtttggccct tctttgtagg 60
 agagtttcat ccgcctgaa atcttcccga tcgttaataa ctctcaggt ccctgcctgc 120
 acagggtttt ttcttagttt gttgcctaag agtacaccaa atgtgacatc ctttcaccaa 180
 tatagattac ttcataccac attgtcaagg aaaggactag aagaattttt tgatgaccca 240
 aaaaactggg ggcaagaaaa agtaaaatct ggagcagcat ggacctgtca gcaactaagg 300
 aacaaaagta atgaagattt acacaaactt tggatgtct tactgaaaga aagaacatg 360
 cttctaacc tagagcagga ggccaagcgg cagagattgc caatgccaaag tccagagcgg 420
 ttagataagg tagtagattc catggatgca ttagataaag ttgtccagga aagagaagat 480
 gccctaaggc ttcttcagac tggtaagaa agagctagac ctggtgcttg gagaagagac 540
 atctttggaa gaatcatctg gcacaagttc aagcagtggg ttataccttg gcacctaaat 600
 aaaagataca ataggaaacg attctttgcc ttgccttatg tggaccattt tctcagactg 660
 gaacgtgaga aacgagccc catcaaagca cggaaggaaa atttagagag aaagaaagca 720
 aaaattcttt taaaaaagtt tccacatctt gctgaagccc aaaagtcaag tcttgtctaa 780
 gatgtctgaa ctattaaatt taccattttg tttttcttga aaaaaaaaaa aaaaaaaaaa 839

<210> 136

<211> 250

<212> PRT

<213> Homo sapiens

<400> 136

Met Ala Ala Ala Gly Leu Ala Leu Leu Cys Arg Arg Val Ser Ser Ala
 1 5 10 15

Leu Lys Ser Ser Arg Ser Leu Ile Thr Pro Gln Val Pro Ala Cys Thr
 20 25 30

Gly Phe Phe Leu Ser Leu Leu Pro Lys Ser Thr Pro Asn Val Thr Ser

35 40 45
 Phe His Gln Tyr Arg Leu Leu His Thr Thr Leu Ser Arg Lys Gly Leu
 50 55 60
 Glu Glu Phe Phe Asp Asp Pro Lys Asn Trp Gly Gln Glu Lys Val Lys
 65 70 75 80
 Ser Gly Ala Ala Trp Thr Cys Gln Gln Leu Arg Asn Lys Ser Asn Glu
 85 90 95
 Asp Leu His Lys Leu Trp Tyr Val Leu Leu Lys Glu Arg Asn Met Leu
 100 105 110
 Leu Thr Leu Glu Gln Glu Ala Lys Arg Gln Arg Leu Pro Met Pro Ser
 115 120 125
 Pro Glu Arg Leu Asp Lys Val Val Asp Ser Met Asp Ala Leu Asp Lys
 130 135 140
 Val Val Gln Glu Arg Glu Asp Ala Leu Arg Leu Leu Gln Thr Gly Gln
 145 150 155 160
 Glu Arg Ala Arg Pro Gly Ala Trp Arg Arg Asp Ile Phe Gly Arg Ile
 165 170 175
 Ile Trp His Lys Phe Lys Gln Trp Val Ile Pro Trp His Leu Asn Lys
 180 185 190
 Arg Tyr Asn Arg Lys Arg Phe Phe Ala Leu Pro Tyr Val Asp His Phe
 195 200 205
 Leu Arg Leu Glu Arg Glu Lys Arg Ala Arg Ile Lys Ala Arg Lys Glu
 210 215 220
 Asn Leu Glu Arg Lys Lys Ala Lys Ile Leu Leu Lys Lys Phe Pro His
 225 230 235 240
 Leu Ala Glu Ala Gln Lys Ser Ser Leu Val
 245 250

<210> 137

<211> 1067

<212> DNA

<213> Homo sapiens

<400> 137

gacaaaggga gaaaaacaac aggaagcagc ttacaaactc ggtgaacaac tgagggaacc 60
 aaaccagaga cgcgctgaac agagagaatc aggtcaaag caagtggaag tgggcagaga 120
 ttccaccagg actggtgcaa ggcgcagagc cagccagatt tgagaagaag gcaaaaagat 180
 gctggggagc agagctgtaa tgctgctgtt gctgctgccc tggacagctc agggcagagc 240
 tgtgcctggg ggcagcagcc ctgcctggac tcagtgccag cagctttcac agaagctctg 300
 cacactggcc tggagtgcac atccactagt gggacacatg gatctaagag aagagggaga 360
 tgaagagact acaaatgatg ttccccatat ccagtgtgga gatggctgtg accccaagg 420
 actcagggac aacagtcagt tctgcttgca aaggatccac cagggctctga ttttttatga 480
 gaagctgcta ggatcgata ttttcacagg ggagccttct ctgctccctg atagccctgt 540
 gggccagctt catgcctccc tactgggctt cagccaactc ctgcagcctg agggcacca 600
 ctgggagact cagcagattc caagcctcag tcccagccag ccatggcagc gtctccttct 660
 ccgcttcaaa atccttcgca gcctccaggc ctttgtggct gtagccgccc gggctcttgc 720

ccatggagca gcaaccctga gtcacctaaag gcagcagctc aaggatggca ctcagatctc 780
 catggcccag caaggccaag ataaatctac caccacaggc acctgtgagc caacagggtta 840
 attagtccat taatttttagt gggacctgca tatgttgaaa attaccaata ctgactgaca 900
 tgtgatgctg acctatgata aggttgagta tttattagat gggaagggaa atttggggat 960
 tatttatcct cctggggaca gtttggggag gattatttat tgtatttata ttgaattatg 1020
 tacttttttc aataaagtct tatttttgtg gcaaaaaaaa aaaaaaa 1067

<210> 138

<211> 189

<212> PRT

<213> Homo sapiens

<400> 138

Met Leu Gly Ser Arg Ala Val Met Leu Leu Leu Leu Leu Pro Trp Thr
 1 5 10 15

Ala Gln Gly Arg Ala Val Pro Gly Gly Ser Ser Pro Ala Trp Thr Gln
 20 25 30

Cys Gln Gln Leu Ser Gln Lys Leu Cys Thr Leu Ala Trp Ser Ala His
 35 40 45

Pro Leu Val Gly His Met Asp Leu Arg Glu Glu Gly Asp Glu Glu Thr
 50 55 60

Thr Asn Asp Val Pro His Ile Gln Cys Gly Asp Gly Cys Asp Pro Gln
 65 70 75 80

Gly Leu Arg Asp Asn Ser Gln Phe Cys Leu Gln Arg Ile His Gln Gly
 85 90 95

Leu Ile Phe Tyr Glu Lys Leu Leu Gly Ser Asp Ile Phe Thr Gly Glu
 100 105 110

Pro Ser Leu Leu Pro Asp Ser Pro Val Gly Gln Leu His Ala Ser Leu
 115 120 125

Leu Gly Leu Ser Gln Leu Leu Gln Pro Glu Gly His His Trp Glu Thr
 130 135 140

Gln Gln Ile Pro Ser Leu Ser Pro Ser Gln Pro Trp Gln Arg Leu Leu
 145 150 155 160

Leu Arg Phe Lys Ile Leu Arg Ser Leu Gln Ala Phe Val Ala Val Ala
 165 170 175

Ala Arg Val Phe Ala His Gly Ala Ala Thr Leu Ser Pro
 180 185

<210> 139

<211> 1785

<212> DNA

<213> Homo sapiens

<400> 139

gcccaggaga ctcccctccc accagcctgg ccccagagt gctgactggc aacaatattc 60
 caagttaaaa tagtttgcta aatagttata caattagttt acaattcaaa tatatcagag 120
 gaaaagacag ggaaaaaaat tctaagatac atgaatccca gaccattgct ctccaaatat 180
 tttcaagtga ttcattctct ttatttataa aatgaattaa ccaccagatg ggacactcat 240

acattcctga tgggtttagg aatcagtaga ccctgtatgg aaagcaatag gataatattt 300
 cataggatca aattaaaatg ttcacagcat tgggtccagg aaattggctt ctggagaatt 360
 tatactccag aaacaattca acaaaagaac acagctctgt gcatgcagat gctcattagc 420
 ccatcaccta gagtaaggga aagtggagat cccaatgaac aacaatgaga tgggttagcg 480
 aactgtgacc tatcagccca atggacattt aagcaatcac tgaaaagtag aaacatgaag 540
 atattacaca acatggaaac tgtttatgga gtatatttag gtaaaaagga aaaaaaggca 600
 gaactgtata tctgtggttg gatatacttt ttttttttaa tattaagcac caacaaaaag 660
 aagaaaggag gatagaaaaa ataaaatgga agatgtaggg tgggcagatt agggctgcgt 720
 ttgttgcttg ctttcattgt accatcatag cgtttttgcc acttacaaag gaggaaaaaa 780
 atcaattctg tgccaacca gacaacagag acctgagtgg ggggtgggaa gagagatttt 840
 tcagcacaga atcagactcc ttctccaaag agctgtgtgg cttcacctg caaggcgacc 900
 tcttcacaa gcagaggcca ggacaaaaag aggcacctgt gagcgacaaa gacggtttcc 960
 ttggtttccc tcacggcgcc aagcggagtg gccgcctccc accacagggc cccctaatgg 1020
 gcgcttttgt cctgcggggc agagggacct cattagaagg cgctggtgct aaagggaaat 1080
 gcatttcag aacaggaggt ttcatcattc ctagecgttag cgacagaatg gtgacagaag 1140
 ctctgtggac gtattttcca gcgttcagtt cacatcaagg atgggtatgc actggcgaa 1200
 aagggcctca ggaggaagca ctcatcttta acaagacctg ctttctcagg actgcaaaca 1260
 agagaaaagc ccaataagag gaaagtgaag tgtgaaatc catttcaaag aactttactg 1320
 agaactcacc atgtcagaga gcttcatta atacagtgc ttcaaaacca ataggcagaa 1380
 cccaaagtaa tggatgactc accaggactt ttagcagcta atggagtact ctgagaaatg 1440
 ctgtaaatcc aatatttttg ctgaaaaatt aatgtgttat gggagggagc ctcttttcta 1500
 atcacttacc caccgccacc ctctacttct agttcaccat cagcatcttt agctcttcta 1560
 atttttgcca aagctgaatg cagttcttcc ccaattttct tatatcattt taagtattat 1620
 atatgtatc ttaccaggcc cactcagaga aacagcactt atctttaaaa ttatttttta 1680
 actactcccc acagcctacg gccataaaaa actctgtaaa ctatgttaaa tataccaaag 1740
 taaagtttcc agaattcaca gaaaaaaaaa aaaaaaaaaa aaaaaa 1785

<210> 140

<211> 86

<212> PRT

<213> Homo sapiens

<400> 140

Met Gly Ala Phe Val Leu Arg Gly Arg Gly Thr Ser Leu Glu Gly Ala
 1 5 10 15

Gly Ala Lys Gly Lys Cys Ile Ser Arg Thr Gly Gly Phe Ile Ile Pro
 20 25 30

Ser Val Ser Asp Arg Met Val Thr Glu Ala Leu Trp Thr Tyr Phe Pro
 35 40 45

Ala Phe Ser Ser His Gln Gly Trp Val Cys Thr Gly Gly Lys Gly Pro
 50 55 60

Gln Glu Glu Ala Leu Ile Phe Asn Lys Thr Cys Phe Leu Arg Thr Ala
 65 70 75 80

Asn Lys Arg Lys Ala Gln
 85

<210> 141

<211> 947

<212> DNA

<213> Homo sapiens

<400> 141

caaaactgaag gtaggatgtc tatataccct tcatttcagg ggcccctaga gaatatacct 60
 tagctttccc tcttcgggca tcttggaag tggatacctg tggccttctt ttcactttga 120

aagcttacac cctcattttg actacaacta atactaaaag cttggcatct tgcttgagat 180
 tagtgtttgc tatgccaaac accttctcct ctttctattg aaagcaaaac ataggaaaaat 240
 aatttgaaat acttttaagg catcttaaaa acatgacttt ttcatcttat ggaaaagcag 300
 accaattttg cttttttttc ccaacttggt ctcagactg tgccaataaa atgtgttcat 360
 agcaggaaaa tttggaaaat acagaaaagc actatgaaga aaacaaaatg tacccaaaaat 420
 cccatcactc agataacatc actgttaatg ttttgatatg tatttccagt cttttctatt 480
 gtgttaattt ttcattttgt ttttgaataa ataactttca ggaaagaaat tgagcctttt 540
 ctgccacctc tgaagcctga ttactgtgtg aagcaggcca tgaaggccat cctcactgac 600
 cagcccatga tctgactccc ccgcctcatg tacatcgtga ccttcatgaa gagcatccta 660
 ccatttgaag cagttgtgtg catgtatcgg ttcctaggag cggacaagtg tatgtacccc 720
 tttattgctc aaagaaagca agccacaaac aataatgaag caaaaaatgg aatctaagaa 780
 tctttttgta tggaatatta cttctatcag aagatgatca agatgtttca gtccagtga 840
 catcagcatt gctgacattt tatggattct aaacttgtgt tgtttctttt ttaaatcaac 900
 tttttaaaaa aataaagtgt aaattaaccg acaaaaaaaa aaaaaaa 947

<210> 142

<211> 65

<212> PRT

<213> Homo sapiens

<400> 142

Met Lys Ala Ile Leu Thr Asp Gln Pro Met Ile Cys Thr Pro Arg Leu
 1 5 10 15

Met Tyr Ile Val Thr Phe Met Lys Ser Ile Leu Pro Phe Glu Ala Val
 20 25 30

Val Cys Met Tyr Arg Phe Leu Gly Ala Asp Lys Cys Met Tyr Pro Phe
 35 40 45

Ile Ala Gln Arg Lys Gln Ala Thr Asn Asn Asn Glu Ala Lys Asn Gly
 50 55 60

Ile
 65

<210> 143

<211> 1148

<212> DNA

<213> Homo sapiens

<400> 143

gcgagatccc taccgcagta tccgcctctg ccgccgcgga gcttcccgaa cctcttcagc 60
 cgcccgaggc cgctcccggg gcccgccggt agaggctgca atcgagccg ggagcccgcg 120
 gcccgcgccc cgagcccgcc gccgcccctc gagggcgccc caggccgcgc catggtgaag 180
 gtgacgttca actccgctct ggcccagaag gagggcaaga aggacgagcc caagagcggc 240
 gaggaggcgc tcatcatccc ccccagcgcg gtcgcggtgg actgcaagga cccagatgat 300
 gtggtaccag ttggccaaag aagagcctgg tgttgggtgca tgtgctttgg actagcattt 360
 atgcttgacg gtgttattct aggaggagca tacttgtaca aatattttgc acttcaacca 420
 gatgacgtgt actactgtgg aataaagtac atcaaagatg atgtcatctt aaatgagccc 480
 tctgcagatg ccccgactgc tctctaccag acaattgaag aaaatattaa aatctttgaa 540
 gaagaagaag ttgaatttat cagtgtgcct gtcccagagt ttgcagatag tgatcctgcc 600
 aacattgttc atgactttta caagaaactt acagcctatt tagatcttaa cctggataag 660
 tgctatgtga tccctctgaa cacttccatt gttatgccac ccagaaacct actggagtta 720
 cttattaaca tcaaggctgg aacctatttg cctcagtcct atctgattca tgagcacatg 780
 gttattactg atcgacattg aaacattgat cacctggggt tctttattta tcgactgtgt 840
 catgacaagg aaacttacia actgcaacgc agagaaacta ttaaagggtat tcagaaacgt 900
 gaagccagca attgtttcgc aattcggcat tttgaaaaca aatttgccgt ggaaacttta 960
 attgttctt gaacagtcaa gaaaaacatt attgaggaaa attaatatca cagcataacc 1020

ccacccttta cattttgtgc agtgattatt ttttaaagtc ttctttcatg taagtagcaa 1080
 acagggcttt actatcttct catctcatta attcaattaa aaccattacc ttaaaaaaaaa 1140
 aaaaaaaaa 1148

<210> 144

<211> 266

<212> PRT

<213> Homo sapiens

<400> 144

Met Val Lys Val Thr Phe Asn Ser Ala Leu Ala Gln Lys Glu Ala Lys
 1 5 10 15
 Lys Asp Glu Pro Lys Ser Gly Glu Glu Ala Leu Ile Ile Pro Pro Asp
 20 25 30
 Ala Val Ala Val Asp Cys Lys Asp Pro Asp Asp Val Val Pro Val Gly
 35 40 45
 Gln Arg Arg Ala Trp Cys Trp Cys Met Cys Phe Gly Leu Ala Phe Met
 50 55 60
 Leu Ala Gly Val Ile Leu Gly Gly Ala Tyr Leu Tyr Lys Tyr Phe Ala
 65 70 75 80
 Leu Gln Pro Asp Asp Val Tyr Tyr Cys Gly Ile Lys Tyr Ile Lys Asp
 85 90 95
 Asp Val Ile Leu Asn Glu Pro Ser Ala Asp Ala Pro Ala Ala Leu Tyr
 100 105 110
 Gln Thr Ile Glu Glu Asn Ile Lys Ile Phe Glu Glu Glu Glu Val Glu
 115 120 125
 Phe Ile Ser Val Pro Val Pro Glu Phe Ala Asp Ser Asp Pro Ala Asn
 130 135 140
 Ile Val His Asp Phe Asn Lys Lys Leu Thr Ala Tyr Leu Asp Leu Asn
 145 150 155 160
 Leu Asp Lys Cys Tyr Val Ile Pro Leu Asn Thr Ser Ile Val Met Pro
 165 170 175
 Pro Arg Asn Leu Leu Glu Leu Leu Ile Asn Ile Lys Ala Gly Thr Tyr
 180 185 190
 Leu Pro Gln Ser Tyr Leu Ile His Glu His Met Val Ile Thr Asp Arg
 195 200 205
 Ile Glu Asn Ile Asp His Leu Gly Phe Phe Ile Tyr Arg Leu Cys His
 210 215 220
 Asp Lys Glu Thr Tyr Lys Leu Gln Arg Arg Glu Thr Ile Lys Gly Ile
 225 230 235 240
 Gln Lys Arg Glu Ala Ser Asn Cys Phe Ala Ile Arg His Phe Glu Asn
 245 250 255
 Lys Phe Ala Val Glu Thr Leu Ile Cys Ser
 260 265

<210> 145
 <211> 1353
 <212> DNA
 <213> Homo sapiens

<400> 145
 aggtctagaa ttcaatcggc cgcttttttt tttttttttt ttgctaacac ccagttctgc 60
 ctgctacacc acctgggaat tgaccatcca gctgtgttct ctctgcctct ggcacagtag 120
 caactgacct gccctattcc tggtgatct catgctgctg aagttcaagg cgctggacac 180
 actaccctga tttttgttgc acctggccta gcctcattaa cttggcaatt agttggtggt 240
 tttctttctt tcttcttctt ttttttttta attcatttca tttctgtcac cccttaattt 300
 tcatctttct tttttaagta gttgttccat gctgtgtgtt tttgttttat ctttcattgc 360
 ctttccctct gcagtcaaca ttatgacctg gggactccag catccttcaa gcaagccatt 420
 tccgaagaag gtgaaaagaa gccaggatga ttggcacctc ctccctctcc tccctcttct 480
 cctcttccct tgcccagccc cctcctgtgc gtgtgtttca gacaacacag gagccagcac 540
 aggagtggaa aatcctgcag cgcaactcag ctacagccac agaagccttg ggaatggcct 600
 cagtttgtgc aataagaaga tttttttttt cttttttaa cttcattata ttttctttga 660
 ttgtctgtga gaaagtaccc aggtccgcct ggaattactc tacagtagaa ataactgaac 720
 acaaacaaac tgatggaaaa aaagagttaa ctattttatt tatttcaata tttaaaagga 780
 aaaaagtgtc gacatggcac agtatttttg tttaaagtac ctctacttcc aaaagttaag 840
 cgcaattttg tgaagacatg aaatcataag agtacttaat gtaaaataaa agactgcata 900
 ttaactctaa agaaaaatgc cccacatttt aaataagaaa ataaagatca actctgtctc 960
 ctacagcttt ttaaaaagcc attcatgtat gtgctttagg tattttttatt tctgcgagtt 1020
 ggatgtggta agtgaggagt gctcagtttt ttttctctcc ttcaaaagtc tattgaaagt 1080
 gttggtgatg ttaaatgatt gtgtgttaag atttgactga aataacttag ccacaaatca 1140
 gcagtttccc ccaccctcat tgcccctca cccagggcaa gcccctttta tctgaatgtc 1200
 agaagcagcc tgcctcctag ttatcatgtc tgatgaggtc tagctcagga aggaattcca 1260
 tctattgatg gaatatatcc cctcaagttc aatagattcg aacacagaga gctttgttta 1320
 aaataatgca gcaaaaaaaa aaaaaaaaaa aaa 1353

<210> 146
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 146
 Met Leu Leu Phe Phe Val Leu Ser Phe Ile Ala Phe Pro Ser Ala Val
 1 5 10 15
 Asn Ile Met Thr Trp Gly Leu Gln His Pro Ser Ser Lys Pro Phe Pro
 20 25 30
 Lys Lys Val Lys Arg Ser Gln Asp Asp Trp His Leu Leu Leu Leu
 35 40 45
 Leu Phe Phe Leu Phe Pro Cys Pro Ala Pro Ser Cys Ala Cys Val Ser
 50 55 60
 Asp Asn Thr Gly Ala Ser Thr Gly Val Glu Asn Pro Ala Ala Gln Leu
 65 70 75 80
 Ser Ser Ala His Arg Ser Leu Gly Asn Gly Leu Ser Leu Cys Asn Lys
 85 90 95
 Lys Ile Phe Phe Phe Phe Leu Asn Leu His Tyr Ile Phe Phe Asp Cys
 100 105 110
 Leu

<210> 147
<211> 2312
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> (2224)

<220>
<221> unsure
<222> (2236)

<400> 147
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ggtctcgggt ggccgcccgc ccaggcgtg gacggcagca ggatgggaa ggcgaaggtc 120
cccgcctcca agcgcgcccc gagcagcccc gtggctaagc cgggtcctgt caagacgtc 180
actcgaaga aaaacaagaa gaaaaaaagg ttttgaaaa gcaaggcgcg ggaagtaagc 240
aagaagccag caagcgccc cggtgctgtg gtgcgacctc caaaggcacc agaagacttt 300
tctcaaaact ggaaggcgct gcaagagtgg ctgctgaac aaaaatctca ggccccagaa 360
aagcctcttg tcatctctca gatgggttcc aaaaagaagc caaaatttat ccagcaaac 420
aaaaaagaga cctcgcctca agtgaaggga gaggagatgc cggcaggaaa agaccaggag 480
gccagcaggg gctctgttcc ttcagggtcc aagatggaca ggaggcgcc agtacctcgc 540
accaaggcca gtggaacaga gcacaataag aaaggaacca aggaaaggac aaatggtgat 600
attgttccag aacgagggga catcgagcat aagaagcgga aagctaagga ggcagcccca 660
gccccaccca ccgaggaaga catctggttt gacgacgtgg acccagcgga tategaagct 720
gccataggtc cagaggcgcc caagatagcg aggaacaggt tgggtcagag cgagggcagc 780
gtcagcctca gcctcgtgaa agagcaggcc ttcggcgccc tgacaagagc cttagccttg 840
gactgtgaga tgggtggcgt gggccctaag ggggagagga gcatggccgc ccgtgtgtcc 900
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<210> 148
<211> 422
<212> PRT

<213> Homo sapiens

<400> 148

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 Val Ala Lys Pro Gly Pro Val Lys Thr Leu Thr Arg Lys Lys Asn Lys
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 Lys Lys Lys Arg Phe Trp Lys Ser Lys Ala Arg Glu Val Ser Lys Lys
 35 40 45
 Pro Ala Ser Gly Pro Gly Ala Val Val Arg Pro Pro Lys Ala Pro Glu
 50 55 60
 Asp Phe Ser Gln Asn Trp Lys Ala Leu Gln Glu Trp Leu Leu Lys Gln
 65 70 75 80
 Lys Ser Gln Ala Pro Glu Lys Pro Leu Val Ile Ser Gln Met Gly Ser
 85 90 95
 Lys Lys Lys Pro Lys Ile Ile Gln Gln Asn Lys Lys Glu Thr Ser Pro
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 Gln Val Lys Gly Glu Glu Met Pro Ala Gly Lys Asp Gln Glu Ala Ser
 115 120 125
 Arg Gly Ser Val Pro Ser Gly Ser Lys Met Asp Arg Arg Ala Pro Val
 130 135 140
 Pro Arg Thr Lys Ala Ser Gly Thr Glu His Asn Lys Lys Gly Thr Lys
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 Glu Arg Thr Asn Gly Asp Ile Val Pro Glu Arg Gly Asp Ile Glu His
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 Lys Lys Arg Lys Ala Lys Glu Ala Ala Pro Ala Pro Pro Thr Glu Glu
 180 185 190
 Asp Ile Trp Phe Asp Asp Val Asp Pro Ala Asp Ile Glu Ala Ala Ile
 195 200 205
 Gly Pro Glu Ala Ala Lys Ile Ala Arg Lys Gln Leu Gly Gln Ser Glu
 210 215 220
 Gly Ser Val Ser Leu Ser Leu Val Lys Glu Gln Ala Phe Gly Gly Leu
 225 230 235 240
 Thr Arg Ala Leu Ala Leu Asp Cys Glu Met Val Gly Val Gly Pro Lys
 245 250 255
 Gly Glu Glu Ser Met Ala Ala Arg Val Ser Ile Val Asn Gln Tyr Gly
 260 265 270
 Lys Cys Val Tyr Asp Lys Tyr Val Lys Pro Thr Glu Pro Val Thr Asp
 275 280 285
 Tyr Arg Thr Ala Val Ser Gly Ile Arg Pro Glu Asn Leu Lys Gln Gly
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Glu Glu Leu Glu Val Val Gln Lys Glu Val Ala Glu Met Leu Lys Gly
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 Leu Asp His Pro Lys Lys Lys Ile Arg Asp Thr Gln Lys Tyr Lys Pro
 340 345 350
 Phe Lys Ser Gln Val Lys Ser Gly Arg Pro Ser Leu Arg Leu Leu Ser
 355 360 365
 Glu Lys Ile Leu Gly Leu Gln Val Gln Gln Ala Glu His Cys Ser Ile
 370 375 380
 Gln Asp Ala Gln Ala Ala Met Arg Leu Tyr Val Met Val Lys Lys Glu
 385 390 395 400
 Trp Glu Ser Met Ala Arg Asp Arg Arg Pro Leu Leu Thr Ala Pro Asp
 405 410 415
 His Cys Ser Asp Asp Ala
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<210> 149

<211> 2103

<212> DNA

<213> Homo sapiens

<400> 149

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<210> 150

<211> 406

<212> PRT

<213> Homo sapiens

<400> 150

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 20 25 30

Lys Lys Arg Arg Glu Arg Glu Glu Arg Gln Asn Ile Val Leu Trp Arg
 35 40 45

Gln Pro Leu Ile Thr Leu Gln Tyr Phe Ser Leu Glu Ile Leu Val Ile
 50 55 60

Leu Lys Glu Trp Thr Ser Lys Leu Trp His Arg Gln Ser Ile Val Val
 65 70 75 80

Ser Phe Leu Leu Leu Ala Val Leu Ile Ala Thr Tyr Tyr Val Glu
 85 90 95

Gly Val His Gln Gln Tyr Val Gln Arg Ile Glu Lys Gln Phe Leu Leu
 100 105 110

Tyr Ala Tyr Trp Ile Gly Leu Gly Ile Leu Ser Ser Val Gly Leu Gly
 115 120 125

Thr Gly Leu His Thr Phe Leu Leu Tyr Leu Gly Pro His Ile Ala Ser
 130 135 140

Val Thr Leu Ala Ala Tyr Glu Cys Asn Ser Val Asn Phe Pro Glu Pro
 145 150 155 160

Pro Tyr Pro Asp Gln Ile Ile Cys Pro Asp Glu Glu Gly Thr Glu Gly
 165 170 175

Thr Ile Ser Leu Trp Ser Ile Ile Ser Lys Val Arg Ile Glu Ala Cys
 180 185 190

Met Trp Gly Ile Gly Thr Ala Ile Gly Glu Leu Pro Pro Tyr Phe Met
 195 200 205

Ala Arg Ala Ala Arg Leu Ser Gly Ala Glu Pro Asp Asp Glu Glu Tyr
 210 215 220

Gln Glu Phe Glu Glu Met Leu Glu His Ala Glu Ser Ala Gln Asp Phe
 225 230 235 240

Ala Ser Arg Ala Lys Leu Ala Val Gln Lys Leu Val Gln Lys Val Gly

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<210> 151
<211> 1330
<212> DNA
<213> Homo sapiens
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<400> 151						
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 aaaaaaaaaa 1330

<210> 152
 <211> 245
 <212> PRT
 <213> Homo sapiens

<400> 152
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 35 40 45
 Met Ala Val Ile His Ser His Leu Trp Lys Gly Leu Gln Glu Lys Phe
 50 55 60
 Leu Lys Gly Glu Pro Lys Val Leu Gly Val Val Gln Ile Leu Thr Ala
 65 70 75 80
 Leu Met Ser Leu Ser Met Gly Ile Thr Met Met Cys Met Ala Ser Asn
 85 90 95
 Thr Tyr Gly Ser Asn Pro Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp
 100 105 110
 Gly Ser Val Met Phe Ile Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly
 115 120 125
 Ile Arg Thr Thr Lys Gly Leu Val Arg Gly Ser Leu Gly Met Asn Ile
 130 135 140
 Thr Ser Ser Val Leu Ala Ala Ser Gly Ile Leu Ile Asn Thr Phe Ser
 145 150 155 160
 Leu Ala Phe Tyr Ser Phe His His Pro Tyr Cys Asn Tyr Tyr Gly Asn
 165 170 175
 Ser Asn Asn Cys His Gly Thr Met Ser Ile Leu Met Gly Leu Asp Gly
 180 185 190
 Met Val Leu Leu Leu Ser Val Leu Glu Phe Cys Ile Ala Val Ser Leu
 195 200 205
 Ser Ala Phe Gly Cys Lys Val Leu Cys Cys Thr Pro Gly Gly Val Val
 210 215 220
 Leu Ile Leu Pro Ser His Ser His Met Ala Glu Thr Ala Ser Pro Thr
 225 230 235 240
 Pro Leu Asn Glu Val
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<210> 153
 <211> 1724

<212> DNA

<213> Homo sapiens

<400> 153

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1724

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<210> 154

<211> 396

<212> PRT

<213> Homo sapiens

<400> 154

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  20              25              30

Val Gly Lys Ser Thr Phe Phe Asn Val Leu Thr Asn Ser Gln Ala Ser
  35              40              45

Ala Glu Asn Phe Pro Phe Cys Thr Ile Asp Pro Asn Glu Ser Arg Val
  50              55              60

Pro Val Pro Asp Glu Arg Phe Asp Phe Leu Cys Gln Tyr His Lys Pro
  65              70              75              80

Ala Ser Lys Ile Pro Ala Phe Leu Asn Val Val Asp Ile Ala Gly Leu
  85              90              95

Val Lys Gly Ala His Asn Gly Gln Gly Leu Gly Asn Ala Phe Leu Ser
 100              105              110

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His Ile Ser Ala Cys Asp Gly Ile Phe His Leu Thr Arg Ala Phe Glu
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 Asp Asp Asp Ile Thr His Val Glu Gly Ser Val Asp Pro Ile Arg Asp
 130 135 140
 Ile Glu Ile Ile His Glu Glu Leu Gln Leu Lys Asp Glu Glu Met Ile
 145 150 155 160
 Gly Pro Ile Ile Asp Lys Leu Glu Lys Val Ala Val Arg Gly Gly Asp
 165 170 175
 Lys Lys Leu Lys Pro Glu Tyr Asp Ile Met Cys Lys Val Lys Ser Trp
 180 185 190
 Val Ile Asp Gln Lys Thr Pro Val Arg Phe Tyr His Asp Trp Asn Asp
 195 200 205
 Lys Glu Ile Glu Val Leu Asn Thr His Leu Phe Leu Thr Ser Lys Pro
 210 215 220
 Met Val Tyr Leu Val Asn Leu Ser Glu Lys Asp Tyr Ile Arg Lys Lys
 225 230 235 240
 Asn Lys Trp Leu Ile Lys Ile Lys Glu Trp Val Asp Lys Tyr Asp Pro
 245 250 255
 Gly Ala Leu Val Ile Pro Phe Ser Gly Ala Leu Glu Leu Lys Leu Gln
 260 265 270
 Glu Leu Ser Ala Glu Glu Arg Gln Lys Tyr Leu Glu Ala Asn Met Thr
 275 280 285
 Gln Ser Ala Leu Pro Lys Ile Ile Lys Ala Gly Phe Ala Ala Leu Gln
 290 295 300
 Leu Glu Tyr Phe Phe Thr Ala Gly Pro Asp Glu Val Arg Ala Trp Thr
 305 310 315 320
 Ile Arg Lys Gly Thr Lys Ala Pro Gln Ala Ala Gly Lys Ile His Thr
 325 330 335
 Asp Phe Glu Lys Gly Phe Ile Met Ala Glu Val Met Lys Tyr Glu Asp
 340 345 350
 Phe Lys Glu Glu Gly Ser Glu Asn Ala Val Lys Ala Ala Gly Lys Tyr
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<210> 155

<211> 2291

<212> DNA

<213> Homo sapiens

<400> 155

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2291

<210> 156

<211> 211

<212> PRT

<213> Homo sapiens

<400> 156

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      20             25             30

Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly Asp Leu Met
      35             40             45

Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly Ser Leu Phe His
      50             55             60

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Ser Thr His Lys His Asn Asn Gly Gln Pro Ile Trp Phe Thr Leu Gly
 65 70 75 80

Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln Gly Leu Lys Gly Met Cys
 85 90 95

Val Gly Glu Lys Arg Lys Leu Ile Ile Pro Pro Ala Leu Gly Tyr Gly
 100 105 110

Lys Glu Gly Lys Gly Lys Ile Pro Pro Glu Ser Thr Leu Ile Phe Asn
 115 120 125

Ile Asp Leu Leu Glu Ile Arg Asn Gly Pro Arg Ser His Glu Ser Phe
 130 135 140

Gln Glu Met Asp Leu Asn Asp Asp Trp Lys Leu Ser Lys Asp Glu Val
 145 150 155 160

Lys Ala Tyr Leu Lys Lys Glu Phe Glu Lys His Gly Ala Val Val Asn
 165 170 175

Glu Ser His His Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp
 180 185 190

Glu Asp Lys Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His
 195 200 205

Asp Glu Leu
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<210> 157

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 157

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<210> 158

<211> 239

<212> PRT

<213> Homo sapiens

<400> 158

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Asp Lys Leu Lys Gly Phe Ser Ile Ala Pro Asp Val Cys Glu Thr Thr
      20              25              30

Thr His Val Leu Ser Gly Lys Pro Leu Arg Thr Leu Asn Val Leu Leu
      35              40              45

Gly Ile Ala Arg Gly Cys Trp Val Leu Ser Tyr Asp Trp Val Leu Trp
      50              55              60

Ser Leu Glu Leu Gly His Trp Ile Ser Glu Glu Pro Phe Glu Leu Ser
      65              70              75              80

His His Phe Pro Ala Ala Pro Leu Cys Arg Ser Glu Cys His Leu Ser
      85              90              95

Ala Gly Pro Tyr Arg Gly Thr Leu Phe Ala Asp Gln Pro Ala Met Phe
      100              105              110

Val Ser Pro Ala Ser Ser Pro Pro Val Ala Lys Leu Cys Glu Leu Val
      115              120              125

His Leu Cys Gly Gly Arg Val Ser Gln Val Pro Arg Gln Ala Ser Ile
      130              135              140

Val Ile Gly Pro Tyr Ser Gly Lys Lys Lys Ala Thr Val Lys Tyr Leu
      145              150              155              160

Ser Glu Lys Trp Val Leu Gly Lys Asn Pro Gly Thr Gln Thr Leu Trp
      165              170              175

Cys Gly Pro Asp Leu Trp Thr Gly Phe Gln Gly Gly Arg Arg Gln Ala
      180              185              190

His Thr Pro Phe His Ala Ala Gly Ala Pro Gly Leu Met Ser Gln Pro
      195              200              205

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Pro Ala Ser Ala Leu Ala Ala Ser Cys Gly His Pro Arg His Ser Arg
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Ser Leu Leu Leu Ala Asp Val Gln Phe Thr Arg Lys Trp Glu Leu
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<210> 159

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<212> DNA

<213> Homo sapiens

<400> 159

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<210> 160

<211> 742

<212> PRT

<213> Homo sapiens

<400> 160

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Gly Leu Asp Arg Val Gln Asp Glu Tyr Ser Arg Arg Ser Tyr Ser Arg
      35             40             45

Phe Glu Glu Glu Asp Asp Asp Asp Phe Pro Ala Pro Ser Asp Gly
      50             55             60

Tyr Tyr Pro Gly Glu Gly Thr Gln Asp Glu Glu Glu Gly Gly Ala Ser
      65             70             75             80

Ser Asp Ala Thr Glu Gly His Asp Glu Asp Asp Asp Ile Tyr Glu Gly
      85             90             95

Glu Tyr Gln Gly Ile Pro Arg Ala Glu Ser Gly Gly Lys Gly Glu Arg
      100            105            110

Met Ala Asp Gly Ala Pro Leu Ala Gly Val Arg Gly Gly Leu Ser Asp
      115            120            125

Gly Glu Gly Pro Pro Gly Gly Arg Gly Glu Ala Gln Arg Arg Lys Glu
      130            135            140

Arg Glu Glu Leu Ala Gln Gln Tyr Glu Ala Ile Leu Arg Glu Cys Gly
      145            150            155            160

His Gly Arg Phe Gln Trp Thr Leu Tyr Phe Val Leu Gly Leu Ala Leu
      165            170            175

Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu Pro Ser
      180            185            190

Ala Glu Lys Asp Met Cys Leu Ser Asp Ser Asn Lys Gly Met Leu Gly
      195            200            205

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Leu Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Leu Trp Gly Gly
 210 215 220
 Leu Ala Asp Arg Leu Gly Arg Arg Gln Cys Leu Leu Ile Ser Leu Ser
 225 230 235 240
 Val Asn Ser Val Phe Ala Phe Phe Ser Ser Phe Val Gln Gly Tyr Gly
 245 250 255
 Thr Phe Leu Phe Cys Arg Leu Leu Ser Gly Val Gly Ile Gly Gly Ser
 260 265 270
 Ile Pro Ile Val Phe Ser Tyr Phe Ser Glu Phe Leu Ala Gln Glu Lys
 275 280 285
 Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile Gly Gly
 290 295 300
 Val Tyr Ala Ala Ala Met Ala Trp Ala Ile Ile Pro His Tyr Gly Trp
 305 310 315 320
 Ser Phe Gln Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg Val Phe
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 Val Leu Val Cys Ala Phe Pro Ser Val Phe Ala Ile Gly Ala Leu Thr
 340 345 350
 Thr Gln Pro Glu Ser Pro Arg Phe Phe Leu Glu Asn Gly Lys His Asp
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 Glu Ala Trp Met Val Leu Lys Gln Val His Asp Thr Asn Met Arg Ala
 370 375 380
 Lys Gly His Pro Glu Arg Val Phe Ser Val Thr His Ile Lys Thr Ile
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 His Gln Glu Asp Glu Leu Ile Glu Ile Gln Ser Asp Thr Gly Thr Trp
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 Tyr Gln Arg Trp Gly Val Arg Ala Leu Ser Leu Gly Gly Gln Val Trp
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 Gly Asn Phe Leu Ser Cys Phe Gly Pro Glu Tyr Arg Arg Ile Thr Leu
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 Phe Asn Phe Thr Leu Glu Asn Gln Ile His Arg Gly Gly Gln Tyr Phe
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 515 520 525

Ser Leu Phe Glu Glu Cys Tyr Phe Glu Asp Val Thr Ser Ser Asn Thr
 530 535 540

Phe Phe Arg Asn Cys Thr Phe Ile Asn Thr Val Phe Tyr Asn Thr Asp
 545 550 555 560

Leu Phe Glu Tyr Lys Phe Val Asn Ser Arg Leu Ile Asn Ser Thr Phe
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Leu His Asn Lys Glu Gly Cys Pro Leu Asp Val Thr Gly Thr Gly Glu
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Gly Ala Tyr Met Val Tyr Phe Val Ser Phe Leu Gly Thr Leu Ala Val
 595 600 605

Leu Pro Gly Asn Ile Val Ser Ala Leu Leu Met Asp Lys Ile Gly Arg
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Leu Arg Met Leu Ala Gly Ser Ser Val Met Ser Cys Val Ser Cys Phe
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Thr Val Glu Leu Tyr Pro Ser Asp Lys Arg Thr Thr Ala Phe Gly Phe
 675 680 685

Leu Asn Ala Leu Cys Lys Leu Ala Ala Val Leu Gly Ile Ser Ile Phe
 690 695 700

Thr Ser Phe Val Gly Ile Thr Lys Ala Ala Pro Ile Leu Phe Ala Ser
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<210> 162

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<400> 162
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<400> 181
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<400> 186
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<210> 187
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<400> 201
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<400> 202
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<400> 208
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<210> 209
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<400> 209
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<400> 234
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<400> 236
cggaagaag aaagccacag 20

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tngtcagagc cccaatggca aacacagaa 29

<210> 238
<211> 86
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20 25 30
Tyr Arg Lys Glu Lys Ala Leu Thr Glu Glu Met Val Met Leu Ser Val
35 40 45
Ser Leu Pro Ser Leu Ser Ala Glu Arg Leu Gly Glu Gly Pro Gln Pro
50 55 60
Pro Ser Leu Val Lys Leu Pro Val Trp Ser Met Thr Val Phe His Pro
65 70 75 80

Arg Leu Trp Glu Ala Pro
85

<210> 239
<211> 48
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<213> Homo sapiens

<400> 239
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Ser Glu Ala Ser Ala Asn Leu Gly Gly Val Pro Ser Lys Arg Leu Lys
20 25 30
Met Gln Tyr Ala Thr Gly Pro Leu Leu Lys Phe Gln Ile Cys Val Ser
35 40 45

<210> 240
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<400> 240
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Glu Asn Pro Phe Leu Glu Val Ser Ala Pro Ser Glu His Phe Ile Glu
35 40 45
Asn Asn Asn Thr Lys Asp Thr Thr Ala Arg Asn Ala Phe Glu Glu Asn
50 55 60
Val Phe Met Glu Asn Thr Asn Met Pro Glu Gly Thr Ile Ser Glu Asn
65 70 75 80
Thr Asn Tyr Asn His Pro Pro Glu Ala Asp Ser Ala Gly Thr Ala Phe
85 90 95
Asn Leu Gly Pro Thr Val Lys Gln Thr Glu Thr Lys Trp Glu Tyr Asn
100 105 110
Asn Val Gly Thr Asp Leu Ser Pro Glu Pro Lys Ser Phe Asn Tyr Pro
115 120 125
Leu Leu Ser Ser Gln Val Ile Ser Leu Lys Phe Ser
130 135 140

INTERNATIONAL SEARCH REPORT

 International application No.
 PCT/US99/18298

A. CLASSIFICATION OF SUBJECT MATTER IPC(6) : Please See Extra Sheet. US CL : Please See Extra Sheet. According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 536/23.1, 23.5; 530/300, 350; 435/69.1, 320.1, 325, 252.3, 254.11; 514/2, 12 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WEST, MEDLINE search terms: co627, kenneth jacobs		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	WO 98/45436 A2 (GENETICS INSTITUTE, INC.) 15 October 1998, especially SEQ ID NO: 407 on pages 221, and claim 1.	1
X	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AA287697 NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap . 'National Cancer Institute, Cancer Genome Anatomy Project (CGAP), Tumor Gene Index'. 13 August 1997.	1-3
X	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AA179549. HILLIER et al. 'WashU-Merck EST Project'. 31 December 1996.	1-3
X	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AA057573. HILLIER et al. 'Generation and analysis of 280,00 human expressed sequence tags'. 02 February 1997.	1-3
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: *A* document defining the general state of the art which is not considered to be of particular relevance *B* earlier document published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art *A* document member of the same patent family	
Date of the actual completion of the international search 02 NOVEMBER 1999		Date of mailing of the international search report 09 DEC 1999
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer CLAIRE M. KAUFMAN Telephone No. (703) 308-0196

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/18298

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOSSY et al. Conservation of neural nicotinic acetylcholine receptors from Drosophila to vertebrate central nervous systems. EMBO J. June 1988, Vol.7, No. 3, pages 611-618, especially Figure 2.	1-7, 9, 11
X,P	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA) GenBank Accession Number AL035661. SULSTON J. 'Direct Submission'. 15 March 1999.	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/18298

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-11

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/18298

A. CLASSIFICATION OF SUBJECT MATTER:

IPC (6):

C07K 14/435, 14/00, 7/06; C12N 5/10, 15/10, 15/11, 15/12, 15/63; A61K 38/16

A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

536/23.1, 23.5; 530/300, 350; 435/69.1, 320.1, 325, 252.3, 254.11; 514/2, 12

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claim(s) 1-11, drawn to polynucleotide of clone co62_12, gene, vector, host cell, method of producing a protein and encoded protein.

Group II-LXXIX, each group consisting of two consecutive claims, drawn to polynucleotide of a distinct clone and encoded protein.

The inventions listed as Groups I-LXXIX do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I corresponds to the first invention wherein the first product is the polynucleotide and the first method of using is the method of making the protein. Note there is no method of making the polynucleotide. The invention also includes the protein made. Each group does not share the same or corresponding special technical feature because each group is drawn to a different polynucleotide and encoded protein. This Authority therefore considers that the several inventions do not share a special technical feature within the meaning of PCT Rule 13.2 and thus do not relate to a single general inventive concept within the meaning of PCT Rule 13.1.